DOCUMENT RESUME

ED 160 758 08 CE 016 886

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TITLE The Testing of Selected Strategies to Eliminate Sex Bias in Vocational Education Programs. Final Report. Volume I. Final Technical Report.
INSTITUTION System Sciences, Inc., Chapel Hill, N.C.
SPONS AGENCY Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C. Div. of Research and Demonstration.
BUREAU NO 498AH50236
PUB DATE 77
GRANT 300-75-0258
NOTE 107p.; Not available in hard copy due to faint print in original document; For related documents see CE 016 860-861, CE 016 881-882, and CE 016 885

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Administrator Attitudes; Change Strategies; Community Programs; Curriculum Development; Curriculum Evaluation; *Educational Assessment; Educational Needs; *Educational Strategies; Information Needs; Instructional Materials; Needs Assessment; Program Effectiveness; Research Needs; Resource Materials; Secondary Education; *Sex Discrimination; *Sex Stereotypes; State of the Art Reviews; State Programs; Student Attitudes; *Vocational Education

ABSTRACT

A study was conducted to identify, develop, and evaluate alternative strategies which vocational educators could employ with students, teachers, and/or administrators to eliminate and prevent the restrictive influences of sex stereotyping and sex bias on the interests, attitudes, occupational expectations, and training offered to secondary school students of both sexes. Using a three-phase methodology (an assessment of the state-of-the-art, a survey of vocational administrators' needs, and the development and evaluation of student curricular strategies), it was found that (1) state and local programs are in initial development stages; (2) information needs exist in the following areas: curricular materials for all students, teacher and administrator inservice and resource materials, program development information, and program implementation information; (3) curricular strategies and staff-created curricular materials have significant impact on student awareness, attitudes, and knowledge about sex bias; and (4) need exists for further research on the elimination of sex bias in vocational education. At the conclusion of the study, six products were published: this final technical report; an executive summary (CE 016 885); an administrator manual, entitled "Strategies to Eliminate Sex Stereotyping and Sex Bias" (CE 016 860); and three sets of student materials, entitled "Eliminating Sexism: Rewriting the Scripts" (CE 016 861), "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook" (CE 016 881), and "In Search of a Job: A Simulation Activity in Occupational Decision-Making" (CE 016 882). (Author/ELG)

ED160758

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Final Report

Project No. 498AH50236
Grant/Contract No. 300-75-0258

THE TESTING OF SELECTED STRATEGIES TO ELIMINATE SEX BIAS IN VOCATIONAL EDUCATION PROGRAMS

Volume I

Final Technical Report

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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CE 016 886

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Occupational and Adult Education
Division of Research and Demonstration
Washington, D.C.

PREFACE AND ACKNOWLEDGEMENTS

Specifications for this project originated in the Fiscal Year 1975 Research Program of the Office of Education in the form of the Part C Vocational Education Research Program. The project manager on behalf of the government was Dr. Jack Wilson, Research Projects Branch, Division of Research and Demonstration, Bureau of Occupational and Adult Education. The authors would like to express special thanks to Dr. Wilson for his patience, timely comments and support during the course of the project.

The work was performed by Ms. Rose M. Etheridge, Ms. Doris M. Lange, Ms. Mary W. Johnston, Ms. Susan Alston and Mr. Eric Rice in the North Carolina office of System Sciences, Inc.

Grateful acknowledgement is made for the cooperation and suggestions from many educators at local, state and federal levels who provided valuable insights into the practical and theoretical problems posed by the study objectives. The efforts of Ms. Amanda Smith, Mr. Jesse Clemmons and Ms. Meg Murphy of the North Carolina State Department of Public Instruction are especially appreciated. Likewise, the consultive assistance provided by Dr. Shirley McCune of the National Foundation for the Improvement of Education, Dr. Jack Blackburn of Auburn University, Dr. Glenn Freedman of the University of Houston, Clear Lake, Ms. Betty Lou Whitford, Mr. Dixon Corbett, Ms. Betheda Justice and Dr. Kinnard White of the University of North Carolina at Chapel Hill, and Dr. James Morrow and Dr. Robert Pittman of Western Carolina University is acknowledged.

A special note of thanks is extended to the North Carolina based school personnel of Chatham County, Jackson County, Moore County, Pitt County, Shelby City, Weldon City and Wilkes County for their help in the pilot, review and revision of project materials, particularly the student materials.

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AUTHORS' ABSTRACT

Primary study objectives focused on identifying, developing and evaluating alternative strategies which educators, particularly vocational educators, could/have employed with students, teachers and/or administrators to eliminate and prevent the restrictive influences of sex stereotyping and sex bias on the interests, attitudes, occupational expectations and training offered to students of both sexes. Emphasis was placed on secondary level vocational programs although information was collected on the entire range of programs, nationwide.

A three-phased methodology was used to develop project findings: (1) a national survey of programs related to vocational equity produced information on the current state-of-the-art in state and local efforts to eliminate and prevent sex stereotyping and sex bias; (2) a survey of vocational education administrators generated data about their needs and potential receptivity to alternative strategies for eliminating sex bias in vocational education; and (3) the development and evaluation of student curricular strategies permitted assessment of the viability of curricular strategies to impact on student awareness, attitude and knowledge about the target issue.

Findings suggest that:

1) State and local programs are in initial development stages;

2) Educators have specific information needs including:

   a) curricular materials for all students;

   b) teacher and administrator in-service and resource materials;

   c) program development information such as program planning and instruction, characteristics of effective programs, and evaluation assistance; and

   d) program implementation information such as legal briefs, explanations of responsibilities, local measures of sex bias and alternative strategies from which to choose;

3) Curricular strategies, and particularly the staff-created curricular materials can/did have significant impacts on student cognitive and affective growth concerning awareness, attitudes and knowledge about sex bias and other work related issues; and

4) There is a series of specific research and development needs relative to the elimination of sex bias in vocational education.

The five volume report includes the Final Technical Report, an administrator manual entitled, "Strategies to Eliminate Sex Stereotyping and Sex Bias," and three different sets of student materials entitled, "Eliminating Sexism: Rewriting the Scripts"; "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook"; and "In Search of a Job: A Simulation Activity in Occupational Decision-Making."

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I. INTRODUCTION

Statement of Need

"When Jody first went to her counselor, a male, about her desire not to take a health course but rather to opt for shop, he laughed her out of his office. When she went to the health education teacher, she was told, 'In ten years ... when you are a mother, you will be grateful to us.'"[1]

Each year when Robert tried to register for typing, his request was disallowed because, in the words of the female registrar, "The typing classes are reserved for girls." Robert's efforts, throughout his high school career, met with exactly the same lack of success.[2]

Such instances of sex bias have been commonplace in most schools--so commonplace that, for years, these instances have passed virtually unnoticed and unquestioned. Few other than those students overtly or covertly restricted from achieving their educational goals have recognized bias.

More fundamental, subtle and pervasive than the sex bias pictured above is the underlying sex stereotyping prevalent in contemporary society. How many times might any adult have found themselves in situations similar to the following:[3]

> You are given flowers. Who do you ask to arrange them prettily in a vase? Your son or your daughter?
>
> A building is under construction. To whom do you point out the crane, the workers, the details of construction? Your daughter or your son?
>
> Relatives come to visit. Do they hug and kiss your daughter and tell her how pretty she looks? Do they shake hands with your son, toss him up in the air, and jocularly mess up his hair? Why?
>
> Would a stranger be able to tell the sex of each of your children from their respective Christmas lists?

The effect of instances of sex stereotyping such as those mentioned above is to limit the awareness and potential of females and males. The

effect of instances of sex bias such as Jody's and Robert's situations is to limit the options and activities of males and females. Such limitations have restricted individual decisions and impeded individual advancement in a variety of life-choice determinations--particularly work related life-choices such as career options, training, hiring practices, earnings and occupational expectations.

Yet even while the limiting effects of sex stereotyping and sex bias are profound, they are not resultant from singular instances of stereotyping and bias such as those cited in the preceding paragraphs. Instead, the effects are caused by consistent behavioral patterns, utilized in specific situations, sustained over time, practiced by many people and so universally accepted as to go almost unnoticed. Instances of sex bias such as Jody's and Robert's attempts to register in nontraditional vocational courses are only two examples of too-often-conventional vocational education enrollment practices. Instances of sex stereotyping such as the differential treatment and expectations of boys and girls with regard to their interests are only several examples of the general attitude and lack of awareness practiced by most adults, including vocational education personnel, in contemporary society.

Recognition of the effects and repeated occurrences of sex stereotypic, sex biased and sex discriminatory practices in work-related education has established the need to conduct a study to determine what methods and means are available to impact on (a) the awareness and attitudes of all persons involved with vocational education--students, instructors and administrators relative to overcoming sex stereotyping and sex bias and (b) the provision of services and training to vocational education students.

General Background

Evidence documenting the limiting effects of sex stereotyping and sex bias, particularly with regard to work-related issues, demonstrates that not only have the effects been profound, but also that both sexes have suffered from such practices. For example, even though women constitute 52% of the population and 41% of the labor force, the median income of women ($6,772)

in the labor force is only 57% of the median income of men ($11,835) in the labor force.[4] Further, women are concentrated into a small number of low-paying, low-status jobs. For example, as late as the mid-1970's, 40% of all women workers were concentrated in the ten occupations of secretary, retail salesworker, bookkeeper, private household worker, elementary school teacher, waitperson, typist, cashier, sewer/stitcher and registered nurse. Over a third of the women workers included in these jobs are located in office and clerical occupations.[5] Most of these ten occupations have been identified as "women's work". Such stereotyping serves to channel women into these roles while limiting the access of males on grounds that such jobs are "unmasculine" or, would result in men "working below their capabilities".

Certainly vocational education alone has not created this situation of occupational stereotyping; however, it has been a contributing factor. For example, as Table 1, Vocational Education Enrollments, indicates, female and male enrollment in vocational education has been stereotypic.

Table 1

VOCATIONAL EDUCATION ENROLLMENTS

	1972[a] % Female	1975[b] % Female	1977[c] (Projected) % Female
Agriculture	5.4	9.2	8.0
Distributive Education	45.3	42.8	46.0
Health	84.7	71.7	83.0
Home Economics	91.6		90.0
Gainful	(86.1)	81.9	----
Consumer Homemaking	(92.1)	73.2	----
Office	76.4	69.3	75.0
Technical	9.8	10.7	9.0
Trade & Industry	11.7	12.6	13.0
Special Programs	44.7	26.7	----
Total	55.4	48.3	----

Sources: U.S. Department of Health, Education and Welfare, Office of Education, Division of Vocational and Technical Education (a) Summary Data--Vocational Education, FY 1972.; (b) Estimates of percentages in Spring of 1977; enrollment figures were missing from 15% of reporting districts; (c) Trends in Vocational Education, FY 1972.

As indicated in the table, sex bias is a national problem; yet, its consequences vary within states. For example, as reported in the House Hearings on sex discrimination in vocational education, the percentages of female enrollment in a program such as trade and industry ranges from 3% to 20% depending on the particular state.

In 1972, females were mainly concentrated in occupational areas which prepared them for low-wage jobs - clerical workers, health service workers and jobs in the distributive education field. The largest concentration of female enrollment was in consumer homemaking which accounted for 42% of all female enrollment. In contrast, males were concentrated primarily in technical, industrial or agricultural training programs, areas which more readily lead to more highly skilled, higher paying jobs.

The trend toward sex stereotyped occupational enrollment appears to be continuing although some progress has been made. A comparison of the 1972 enrollment figures, the 1975 figures and the 1977 enrollment projections indicates some change in occupational enrollment by sex. One potentially emerging trend is a shift of males into traditionally female occupational areas, especially consumer homemaking and office occupations. One possible reason for this trend could be the greater ease of males in obtaining employment in nontraditional occupations. The results of a recent study of nontraditional employment indicated that males trained in nontraditional occupational areas were more likely than females trained in nontraditional areas to find jobs in areas in which they were trained. Nontraditionally trained males and females were no more and no less successful than students trained in traditional areas in finding jobs. With the possible slight exception of males trained in nontraditional areas, having taken nontraditional courses appears to have little relationship to future employment.[6]

Lack of awareness and sex stereotypic attitudes are even greater problems in vocational education than are stereotypic enrollment patterns because attitudes and awareness levels (a) create the environment in which enrollment policies and individual registration decisions are made and (b) serve as information items on which such decisions are based. One

example of such attitudes and awareness are the behavioral expectations associated with "maleness" and "femaleness." Males are generally expected to behave in ways that conform to the following:

1) the decision-makers in their families and in the legal arena of the country;
2) strong, brave and unemotional;
3) successful--making enough money to provide wives and families with the things that they want;
4) decisive--never uncertain;
5) an expert on every subject--always know the answers; and
6) athletic--prove oneself by winning in competition, at work and at play.

Females are generally expected to behave in ways that conform to the following:

1) supportive of males;
2) assume the major responsibility for child care;
3) organize and complete household responsibilities, insuring that things work smoothly and efficiently;
4) non-ambitious and non-aggressive;
5) non-competitive in areas where men compete;
6) soft-spoken and attractive; and
7) relatively non-opinionated on social and political issues.

Such stereotypes have placed enormous pressure on males to excel and to perform aggressively and ambitiously. For many males, work has become all-consuming, absorbing most time and energies. For women, behavioral expectations such as those listed above have contributed to the establishment of low ambitions and/or the "fear of success" syndrome which has hindered advancement because success can be seen as a contradictory message to behaviors which they have previously learned. Further, some women fear that salary and job advancements which place them in competition with men will make them more masculine. Conversely, males who do not or cannot provide for their families either fear that others do not consider them to be "real men" or believe themselves not to be men. Males who believe that they must meet these "standards," but fail to do so, often suffer ulcers, depression, anxiety, alcoholism and even suicide.

There is a plethora of similar sex stereotypes, taught by school and family, often unknowingly, which serve to limit equal opportunity for

individual growth and fulfillment and equal access to vocational education and occupational entry. Examples of several of the more critical of these stereotypes are those cited below:

A) Masculinity and independence are judged to be synonymous while femininity and independence are judged to be antonymous. The major fear revealed in many male group therapy sessions is fear of dependence, especially dependence on women. 7

B) Women are too often assumed capable of only helping men do "men's work." Working at home or outside the home, women are too often pictured as assistants or in a supporting role, rather than as equals, the "breadwinner," or an equal partner in the management of affairs. Hence, the cliche, "behind every great man is a woman" persists and contributes to the continued reluctance to hire women as managers or administrators.

C) In general, it has been assumed that "child care is a woman's responsibility" or "women can care for children better than men." This stereotype is reflected in elementary school teaching as an occupation. Over 85% of elementary school teachers are women. There are many men who enjoy and are good at caring for children, but they have been kept from working with children because child care has been stereotyped as woman's work. In vocational education an analogous situation holds true in that the vast majority of instructors in courses with predominately female enrollees are women while the vast majority of instructors in courses with predominately male enrollees are men. One further point about elementary schools falls within the context of identifying "women's work" and men's work." Although most elementary teachers are women, less than 20% of elementary school principals are women. 8 This fact is a direct reflection of the stereotype that "women are capable of taking care of children but should be supervised and managed by men."

D) The Department of Labor has compiled a list of stereotypes about women workers, all of which are <u>false</u>, but which too often are believed. These include:

1. A woman's place is in the home.
2. Women are not seriously attached to the labor force; they work only for extra pocket money.
3. Women are out ill more than men workers; therefore, they cost the company more.
4. Women have a higher turnover rate than men.
5. Women do not work as long or as regularly as men; therefore, their training is costly, and largely wasted.
6. Women take jobs away from men; women should quit the jobs they now hold.

7. Women should stick to "women's jobs," and should not compete for "men's jobs."
8. Women do not want responsibility on the job; they would prefer not to have promotions or job changes which add to their load.
9. Women get married, then quit work.
10. Women are unfit for positions of responsiblity.
11. Women are not career oriented.
12. Men do not like to work for women supervisors.
13. Women will not travel in a job.
14. Children of working mothers are more likely to become troublemakers than children of non-working mothers.
15. Education is wasted on women.[9]

The facts which expose many of these stereotypes as false are startling although little publicized. These include such items as the following:

1. Nine out of ten women will work at some time in their lives.
2. Most women work because of economic need. About 60% of all women workers are single, widowed, divorced or have husbands who earn less than $7,000 per year.
3. More than one-half of all women between the ages of 18 and 24 are workers.
4. Among all families, one out of eight is headed by a woman. Of all women workers, one out of ten is a family head.
5. Among all poor families (total income less than $4,275 per year), two out of five are headed by a woman.
6. The average woman worker is slightly better educated than the average man worker. Women have completed a median of 12.5 years of schooling; the median for men is 12.4 years.
7. Women workers are concentrated in low-paying, dead-end jobs. As a result, the average woman worker earns less than three-fifths of what a man does, even when both work full time year around.
8. Fully employed women high school graduates (with no college) have less income on the average than fully employed men who have not completed elementary school.[10]
9. The job turnover rate is greater for men than woman and the absentee rate is almost identical.[11]

Attitudes and awareness concerning these and other sex related stereotypes must be changed if equal opportunity and equal access to vocational education and occupational development is to become a reality. There is evidence to support the contention that efforts to overcome and prevent occupationally related sex stereotyping can have dramatic effects.

For example, a recent survey of successful female professionals and executives revealed that the one common characteristic of these individuals was their background of very few of the usual restrictions imposed by sex role stereotypes.[12]

During the past two years a number of projects have been initiated which were designed to impact on occupationally related sex stereotyping and sex bias in vocational education. However, little information has been systematically collected and evaluated relative to the types of programs and services provided, the types of strategies employed or the effects on the target populations. Further, very few curricular strategies have been developed, implemented or evaluated at student, instructor or administrator level in vocational education relative to overcoming such instances of sex stereotyping and sex bias as those cited above.

Legal Background

In addition to the moral and ethical need to overcome sex stereotyping and sex bias, it has become the legal obligation of all public educational agencies to eliminate and prevent sex stereotyping, sex bias and sex discrimination in vocational education. While measures such as the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964 and the Equal Employment Opportunity Act of 1972 impact on this obligation, the more specific directions are included in the Education Amendments of 1972, the Women's Educational Equity Act of 1974 and the Education Amendments of 1976. Title IX of the Education Amendments of 1972, for example, provides with some exceptions:

> "No person in the U.S. shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance ...."

The Women's Educational Equity Act of 1974 (Section 403 of the Education Amendments of 1974, P.L. 93-380) reads:

"(1) the Congress hereby finds and declares that educational programs in the U.S. ..., as presently conducted, are frequently inequitable as such programs relate to women and frequently limit the full participation of all individuals in American society.

(2) It is the purpose of this section to provide educational equity for women in the United States."

The Education Amendments of 1976 has extended the obligative commitment of educational agencies to provide equal education to all individuals regardless of sex and has provided specific measures and funds for establishing such remedies. For example, state education agencies are required to review all vocational education programs in the state in order to identify and remedy instances of sex stereotyping. Data on the status of females and males in vocational education programs must be collected, analyzed and disseminated to state and federal personnel as evidence of the states' efforts to eliminate sex stereotyping. Further, vocational education programs must insure that the interests and concerns of women are addressed in new and existing programs.

The new act contains another provision that serves as an incentive to states to study the problem of sex stereotyping in vocational education programs. States are encouraged to establish an office for the elimination of stereotyping in education and are offered a $50,000 annual incentive which may be used for staff and special projects to overcome sex bias. It is noted that additional funds for counselor training in specific techniques designed to overcome sex stereotyping are also available.

Purpose and Objectives

The central purpose of this research project was to identify and/or develop and evaluate alternative strategies which educators, particularly vocational administrators and instructors, can employ at the student, instructor or administrator level to impact upon and overcome the restrictive influences of sex stereotyping and sex bias on the

interests, attitudes, choice of occupations and training offered to students of both sexes. The specific objectives devised to guide the research activity are:

1. Develop and field test alternative strategies for the elimination of sex stereotyping and sex bias in public vocational education programs at the secondary school level;
2. Identify and develop strategies and recommendations useful to state level vocational education administrators in efforts to develop a statewide program for eliminating sex stereotyping and sex bias in vocational education programs; and
3. Compile information and categorize strategies useful to local vocational education administrators in developing and planning programs for eliminating sex bias, taking into account local resources.

Expected Outcomes and Products

Project results were structured to provide vocational educators--administrators and instructors--with alternative practical interventions, useful in eliminating/preventing barriers to full occupational opportunity which have been constructed by traditional sex stereotyped and sex biased attitudes and practices. The specific outcomes and products include the following:

1. Student curricular materials--Three sets of student instructional materials dealing with the concepts of sex stereotyping and sex bias in the world of work were developed, implemented and revised. Each set of materials utilizes different instructional techniques and can be used as classroom materials for up to one grading period. The three sets of materials are:
    a) Eliminating Sexism: Rewriting the Scripts: An Informational Guide to Sex Stereotyping, Sex Bias and Sex Discrimination
    b) Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook
    c) In Search of a Job: A Simulation Activity in Occupational Decision-Making
2. Program Administrator's Manual--A vocational education administrator's manual was developed for two audiences.

Some information was designed for use at the state and regional levels and includes:

a) recommendations concerning state education agency approaches based on the findings of the study;

b) programmatic approches based on study findings;

c) findings and recommendations concerning strategies and materials that can be used by educators in vocational education classes;

d) materials that can be used in the in-service training of educators;

e) recommendations for monitoring and evaluating the progress of local agencies.

Other information is of particular benefit at the local level and includes:

a) information on various strategies, including their effectiveness, cost and difficulties in implementing; and

b) information on the issue of sex stereotyping and bias and how to approach the problem in a local education agency.

3. Final Technical Report--A concise statement of project goals, activities, findings, conclusions and recommendations. An Executive Summary was prepared for dissemination of key results and findings to the broadest possible audience.

Definitions

The concepts of stereotyping and discrimination are addressed throughout this study. There is no implication that all stereotypes are wrong. Rather, categorizing or grouping people according to some characteristics which all persons in that category hold in common is one of the mechanisms human beings use to order their lives. The potential difficulty arises after categorization when people within a category are often thought to share not only the common characteristic upon which they were grouped, but also are thought--often incorrectly--to share many behaviors, abilities or traits. These latter beliefs or judgments are called stereotypes. Unfortunately, stereotypes are over-simplified and are often false descriptions of the people in that category.

Stereotypes influence behavior in several ways. First, they influence the way persons behave toward those about whom the stereotype is held. Second, they influence the behavior of those persons who have been stereotyped. When persons are treated differently because they belong to a category of people about which a stereotype is held, discrimination has occurred. Discrimination serves to restrict or deny the rights, privileges and choices of those persons who are discriminated against and has become the term of and basis for legal recourse.

Sex bias is a more inclusive term, including not only acts of sex discrimination, but also the entire range of behaviors of males or females directed toward females or males and based on the assumption that either sex is superior to the other.

Recently published definitions of these terms used by the U.S. Department of Health, Education and Welfare are as follows:

1. Sex Discrimination: Action(s) which limits or denies a person or group of persons opportunities, privileges, roles or rewards on the basis of their sex.
2. Sex Stereotyping: The attribution of behaviors, abilities, interest, values and roles to a person or a group of persons on the basis of their sex.
3. Sex Bias: Behavior resulting from the assumption that one sex is superior to the other. "Sex bias," as used in the Act includes "sex discrimination."

II. METHODS AND PROCEDURES

The research activity was divided into several components, each of which utilized a different methodology. The three components were:

Component One: Surveys of Program Types and Strategies
Component Two: Administrator Assessment of Need
Component Three: Assessment of Student Instructional Materials

Component One: Surveys of Program Types and Strategies

The national and state surveys were designed to develop a comprehensive list of programs and strategies which are being used at state and local levels to eliminate and prevent sex stereotyping and sex bias in vocational education. Three distinct surveys were conducted, each directed at a different target group. Surveyed programs included those projects funded through any available resources and listed with the following sources: (a) Smithsonian Science Information Exchange; (b) National Institute of Education--Education Equity Group and the Education and Work Group; (c) Office of the Assistant Secretary for Education--Fund for the Improvement of Postsecondary Education and the National Center for Educational Statistics; (d) The Office of Education--Women's Program Staff, Bureau of Occupational and Adult Education, Bureau of Postsecondary Education, Office of Career Education and Bureau of School Systems; (e) Local Plans for Vocational Education prepared by North Carolina school systems; (f) references to programs included in the ERIC and the AIM/ARM system; and (g) projects listed with sources such as the "Strategies to Achieve Vocational Equity" of the National Advisory Council on Vocational Education. A total of approximately 200 state and local programs was surveyed during the course of the Component One assessment with a return rate on information requests of approximately 75%.

Survey One: State Level Survey

The purpose of this survey was to create an information base about state level systematic and/or programmatic efforts in order to generate

recommended approaches which state education agencies can use to encourage and assist local education agencies in their efforts to overcome and prevent sex stereotyping and sex bias. Information was collected from and/or about state level programs as well as programs that could be adapted to become state level programs. Further, information about conceptual models of change in educational organizations was examined to enable project staff to (a) categorize the approaches found in the survey and (b) generate recommended state level approaches that are based not only on current practice, but also on the strengths and weaknesses of a specific change model as supported by current research literature. The models of change in educational organizations that were analyzed included the diffusion approach, the technical assistance approach, the planned change approach, the conflict approach and the complex organization approach. The specific questions around which Survey One was designed included:

1) What types of approaches are currently in use at the state level to encourage and facilitate local education agency efforts to overcome and prevent sex stereotyping and sex bias?

2) What approaches, or which elements of different approaches, are supported in the research literature as viable means to induce change in educational organizations?

3) What trends in the various approaches and their relative effectiveness are discernable?

4) What constitutes a prototypic or model program, based on the collected information?

Survey procedure included accessing information from state level programs by letter and, if necessary, follow-up phone calls. Descriptive content analytic methods were used to determine (a) the current state-of-the-art in state level programs, (b) reported and potential success and (c) categorization and trends among programs based on the organizational change literature.

Survey Two: Program Survey

The purpose of the second survey was to create an information base about the types of programs in use, nationwide, at the local level to overcome and eliminate sex stereotyping and sex bias in vocational education. The questions put to this particular data included the following:

1) What are the emerging trends in terms of (a) target populations, (b) materials, (c) strategies, (d) services, (e) goals, and (f) geographic area served, in the types of programs being developed at the local level to eliminate and prevent sex stereotyping and sex bias?

2) What data is available relative to the effectiveness of surveyed programs?

3) What are the differential costs associated with various program types?

Of particular concern were trends in program types implemented at the local level as well as the differential effectiveness of these various programs. Staff adapted the categorization scheme used by the staff of the Human Resources Management project, "Strategies to Achieve Vocational Equity,"[13] as a framework for analyzing trends. The categories into which programs were placed included (a) counseling programs, (b) career awareness programs, (c) conferences, (d) workshops, (e) materials development and/or revision, (f) curricular programs, (g) self-help information and (h) research. It is noted that the use of this categorization scheme is limited to Survey Two because it provides only simple identification of the format of activity rather than accounts for a conception of change. Information was accessed by letter request and included specific questions about goals, target populations, strategies and evaluation procedures. Information was compared on each of these four topics as well as classified into general program types in order to identify trends, needs and barriers. Relative success of different program types also was noted.

Survey Three: Local Strategies

The purpose of the third survey was to create an information base about the strategies used in the various types of programs which are designed to overcome and prevent sex stereotyping and sex bias in vocational education. The strategies were collected from all local education agencies in North Carolina which have prepared sex bias elimination plans. The analyses of these plans focused on:

1) Classifying strategies in use according to target population to indicate relative concentration of effort.

2) Quantifying the preferred strategy and/or type of strategy employed in current programs; and

3) Identifying needs, barriers and areas of neglect in provision of such services to students.

Component Two: Administrator Assessment of Need

The administrator assessment of need activity was designed to collect data on the (a) needs and (b) receptivity of vocational education administrators in North Carolina to alternative strategies and approaches for overcoming and eliminating sex bias and the problems associated with that task. A stratified random sample of North Carolina local education agency vocational administrators was selected. The sample was stratified on (a) major geographic region--tidewater, piedmont and mountains; (b) type of school system--municipality or county; and (c) size of school system--small (<2500), medium (2501-7000) and large (>7000). Figure 1 is a pictorial representation of this stratification indicating the number of systems in each cell. A 15% sample of school systems with vocational education administrators or planners was chosen for inclusion in this survey. The systems that were included in the sample are indicated in Fig. 1 by the numbers in parentheses. The relative proportional distribution of selected systems, together with the stratification plan produced a representative sample for this assessment.

		Coastal Plains	Piedmont	Mountains
Municipality	0 - 2500	0	6 (1)	4
	2501 - 7000	6 (1)	20 (3)	5 (1)
	7001 - Up	0	8 (1)	1
County System	0 - 2500	9 (1)	0	5 (1)
	2501 - 7000	10 (2)	15 (2)	14 (2)
	7001 - Up	9 (1)	25 (3)	11 (2)

Fig. 1. Stratification Sampling Plan

Project staff prepared a guided interview data collection instrument for use in the administrator assessment of need component. The questions were based on a literature review of issues related to sex bias and sex stereotyping and were constructed using the Developmental Questioning Scheme.[14] This scheme classifies all questions as either closed or open questions. Within the class of closed questions there were (a) truncated questions which are used only to confirm or deny facts, given all the information, and (b) elaborative questions which are used to expand or justify information about a particular subject.

Within the class of open questions there are (a) unbounded questions which are used to expound without structure on any particular subject and (b) bounded questions which are used to develop, extend and relate complex portions of particular subjects. Project staff utilized primarily elaborative and bounded questions in constructing the interview guide. Additionally, several truncated questions were used to establish a general description of the target group and unbounded questions were used to address the issue of barriers to the provision of services.

Use of the instrument was standardized among interviewers through monitored, simulated interview sessions with an interviewer correspondence rate of over 95%. The interviews were conducted in 30-minute segments over a four-week time span, midway through the research project. A copy of the Administrator Guided Interview is included as Appendix A of the Final Report.

Component Three: Assessment of Student Instructional Materials

The initial literature review as well as portions of Research Components One and Two indicated that student instructional materials for both males and females was a strategy which had been neglected in many programs designed to eliminate and prevent sex stereotyping and sex bias in vocational education. While some information and some values clarification materials have been developed for women in several pilot curriculum and counseling programs designed to address the issue of sex stereotyping, classroom based curricular materials for all students have been neglected in terms of (a) existence of such materials and/or (b) systematic comparison of the differential effects of alternative curricular designs. This situation is paradoxical since information strategies were the principal concern of vocational education administrators and since sex bias is a problem for females and males.

Project staff created three different sets of classroom-based curricular materials, each of which was based on a different concept of change, each of which presented information on sex stereotyping and sex bias in the world of work and each of which was an alternative strategy to eliminate bias. The questions around which this effort was designed included:

1) Are classroom-based curricular strategies viable alternatives for overcoming and eliminating sex stereotyping and sex bias in vocational education?

2) Are there differences in effectiveness of impacting on student attitude and awareness between distinct types of change-based, classroom curricular materials in terms of student characteristics and/or school characteristics?

3) Can the same classroom curricular materials used to impact on the issues of sex bias and sex stereotyping also be used to convey

additional cognitive information? If so, are there differences in cognitive effectiveness between distinct types of change-based, classroom materials in terms of student characteristics and/or school characteristics?

Conceptual Framework

Each of the three sets of curricular materials was based on a different concept of change. These conceptions of change were adapted primarily from two sources: Bennis, Benne and Chin's The Planning of Change[15] and Jacobsen's Power in Interpersonal Relations.[16] The three categories were (a) the empirical-rational category, (b) the normative-reeducative category and (c) the power-coercive category. Explanation of the underlying assumptions and specifications for each category is included in Fig. 2, Conceptual Models of Change. It is noted that while the categories bear names coined by Bennis, Benne and Chin, the specifics of each category have been expanded and adapted to include practical as well as theoretical situations.

CONCEPTUAL MODELS OF CHANGE
(Figure 2)

I. EMPIRICAL-RATIONAL MODEL

A. Curricular Materials Prepared: "Eliminating Sexism: Rewriting the Scripts"

B. Basic Assumptions

1. Human decisions are based upon and guided by reason and adherence to rational self-interest.
2. Learning requires receptivity on the part of the learner, but no particular active involvement in order to learn.
3. Change results from a change in technology and/or information.

C. Criteria to Differentiate Activities Particular to This Model

1. Learning precedes experience so reception of information or new technology is the basic ingredient of this approach.

(Fig. 2 continued)

2. Activities only present the facts rather than teach the process by which the facts, and future facts, are derived and/or resolved.
3. Individual self-interest is stressed as a vehicle for decision-making; other processes are not addressed and persons other than the individual are not involved beyond the information dissemination point.
4. The learner assumes a position of relatively passive recipient of information.
5. This model requires the "right" person in the "right" place at the "right" time; it is a combination of psychology and knowledge.
6. Action is individual rather than systemic.

II. NORMATIVE-REEDUCATIVE MODEL

A. Curricular Materials Prepared: "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook"

B. Basic Assumptions

1. Human action and decisions are not solely based on rationality but rather are dependent upon and supported by socio-cultural norms and the attitudes and value systems of individuals.
2. Humans are inherently active and transactional within their environment.
3. Change occurs through an alteration in normative systems (attitudes and values).

C. Criteria to Differentiate Activities Particular to This Model

1. Learning is experience-based. Active participation in reeducation is required if there is reeducation--including normative, cognitive and perceptual change.
2. Problems must be clearly defined prior to solution.
3. Technical information is only one portion of any solution.
4. Change agents are useful when intervention is collaborative with the client's effort to define and resolve the situation.
5. Non-conscious elements which impede problem solution must be clarified, examined and reconstructed.
6. Feedback is a critical ingredient to the participant.
7. Change occurs from within human systems rather than external to the systems.
8. Processes (values clarification, decision-making and problem-solving) are stressed.

(Fig. 2 continued)

III. POWER-COERCIVE MODEL

A. Curricular Materials Prepared: "In Search of a Job: A Simulation Activity in Occupational Decision-Making"

B. Basic Assumptions

1. Human decisions and actions are based upon a system of constraints and imperatives--legal, economic, moral and social--which are basic to power and compliance and serve to insure, direct and support action.
2. Learning requires adherence to an internalization of the power/compliance constraints.
3. Change results from external pressures and requirements and is systemic rather than individual.

C. Criteria to Differentiate Activities Particular to This Model

1. Learning is situationally based; it involves action and reaction to the power, authority and compliance systems; it combines behavior and knowledge.
2. Life is systemic and organizational rather than individual.
3. Power is utilized in experiences to reflect realistic situations (political, economic, moral and social).
4. Human decisions are situationally based and are impacted upon by power/authority systems of organizations and social systems.
5. Change requires consideration of multiple subtle impingements, conscious and non-conscious, which must be systematically altered. The learner must be involved; often organized efforts (joint action) are required since systemic rather than individual efforts are required.
6. Change occurs from outside human systems rather than internal to them.
7. Change is inevitable.
8. The processes involved are power, authority and compliance systems.

Fig. 2. Conceptual Models of Change

Sample

The sample selected for inclusion in the curricular materials assessment was derived by drawing a stratified random sample from the stratification plan prepared for Component Two, Administrator Assessment of Need, and depicted in Fig. 1, Stratification Sampling Plan. A 5% sample of North Carolina school systems was selected, emphasizing the strata of geographic region and type of system, five Piedmont, two Mountain and one Coastal systems or three municipal and five county systems were selected. It is noted that the selected sample of eight systems did represent those cells that contained the largest numbers of school systems in the state. As such, project staff was confident the sample was representative of North Carolina, with the exception of major urban areas; the urban system initially selected, withdrew after initiation of the activity. Limitations of time and resources precluded selection of another urban system.

One high school was selected at random within each of the seven sample school systems involved in the study. Within each high school, tenth grade social studies classes were used to implement the study. Social studies classes were chosen in order to draw a sample of vocational and nonvocational education students. Approximately 75% of the tenth grade students at the selected high schools were involved in the study. The remaining 25% of students were not involved because of prior instructional commitments; there is no reason to believe that the non-participating 25% of students differed from the included 75% in any way that could bias results.

Within each high school, curricular materials and control group status were assigned to classes of students at random. However, teachers retained the perrogative to assign particular sets of curricular materials based on each teacher's evaluation of the type of material that they believed they taught best and/or were most comfortable teaching. Curriculum allocation was accomplished in this fashion in order to encourage teacher enthusiasm and commitment.

Instrument Development

A pretest-posttest design was selected for use in the curricular assessment component.[17] The pretest instrument, the Student Awareness

Measure (SAM), was developed in three parts: (a) general information, (b) jobs and (c) interests. The general information section was developed from the project literature review and included items based on the critical variables which impact on the occurrence of sex stereotyping and sex bias as identified in the literature. Among the variables/questions included in this section were questions dealing with occupations in household, household income, education levels in household, work experience, race, sex and religion. More importantly, questions regarding student academic achievement and participation in vocational education were included.

Part two of the pretest instrument focused on jobs. Students were asked to inspect a list of jobs and indicate which jobs they thought were for men, which jobs they thought were for women and which jobs they thought were for both men and women. That is, students were asked who could and should hold this job, rather than who does hold this job. Additionally, students were asked to rank the importance of each job on a four-point, forced-choice scale from very important to not very important. Lastly, students were asked to indicate those jobs which they might like to hold as well as those they would not care to have.

Part three of the Student Awareness Measure was constructed to collect additional information on student awareness and attitude relative to sex stereotyping and sex bias. Questions were constructed by combining typical sex stereotypic attitudes as derived from the literature with items adapted/rewritten from standardized attitude, job satisfaction and work values instruments. As in part two, part three of the "SAM" utilized a four-point, forced-choice scale, ranging from "agree strongly" to "disagree strongly" in order to quantify student responses.

The posttest utilized the same data items, but reordered the questions and was entitled Form B. Additionally, the posttest assessment included a simple content and performance evaluation instrument to be used in conjunction with a teacher-made test. It is noted that less than 5% of the students questioned recognized it was the "same" instrument, although a number did note similarity.

Validation of the Student Awareness Measure was accomplished by several means. The instrument was scrutinized and revised through expert review

performed by consultants who were educational psychologists, evaluation specialists, tests and measurements specialists and vocational counselor educators. Among the elements these reviewers noted were (a) correspondence of questions to literature requirements, (b) language usage and sentence structure, (c) question placement and (d) item selection compared to the purposes of the instrument and the possible pool of questions.

The instrument was screened by each of the participating school systems in order to insure that student or family confidences were not violated and in order to insure that the instrument was not counter to local educational policy. In like manner, consultant advice was obtained from the school law specialists at the North Carolina Institute of Government to insure that student rights and privacy were not abridged.

Reading level and response mode difficulty were assessed and revised through a pilot of the instrument with a group of students like those included in the sample. This pilot also provided an opportunity to compare student responses on part two, "Jobs," with standardized responses on (a) the status of jobs and (b) job interest. The response rate on job status achieved above a 90% correspondence rate with similar occupational status measures.[18] The job preference findings, when compared to those collected through use of the "Self Directed Search for Educational and Vocational Planning, Form E," achieved a similar correspondence. Lastly, interviews with a random sample of pilot group students indicated that answers returned on part three of the instrument, "Interests," were accurate reflections of student interest, awareness and attitude with a correspondence rate of over 95%. Further, while the interviews indicated that a six-point, forced-choice scale would have been slightly more accurate, it was deemed unnecessarily time-consuming and too complicated for a sizable portion of the students involved in the study. A copy of the pretest and posttest Student Awareness Measure is included as Appendix B of this Final Report.

Assessment Procedures

The curriculum assessment procedures utilized most tenth grade social studies classes in each of the participating high schools. Within each high school, and usually within the classes taught by each participating instructor, one to two classes were reserved as a control group. The students in the control, like those students who used the curricular materials, were administered the posttest. In addition, half of each control group of classes was administered both pretest and posttest in order to assess the effect of the instrument alone.

Each class of students used one and only one set of curriculum materials in order to assess differences in impact between curricular strategies. The posttest assessment took place at the end of the project period. Classes used the curricular materials for a minimum of six and a maximum of seven class sessions between pre- and post-assessment. All classes using the same package of curricular materials used the same parts of the package in the same order. It is noted that a number of instructors chose to continue using the materials in excess of seven sessions, but not before completing the posttest assessment for the study.

After implementing the curriculum and collecting pretest and posttest data, data analyses were performed in order to determine (a) the effects the curriculum had on students, (b) the areas in which the effect was greatest, (c) the differential effect by curricular type, student type, or school type, and (d) other cognitive and reflective effects of the curricular materials. Of particular concern were the overall effects of the materials on students, as well as the effects on males as compared to females and the effects on vocational education students as compared to nonvocational education students. Data analysis procedures were concentrated on the shifts in frequency distribution of student responses between pre- and post-assessment measures. Chi Square techniques were the principal statistical procedure employed.

These findings, along with those of Component One and Component Two, are included in the Findings section of this Final Report.

III. FINDINGS AND RESULTS

The findings and results derived from research activities in the three project components are presented in this section. Figure 3, Graphic Presentation of Research Components, presents an overview of the purposes and respondents of each activity for easy reference.

Component One: Surveys of Program Types and Strategies

Component One of the research project was designed to produce a data base about the current state-of-the-art in the systems (survey one), the programs (survey two) and the strategies (survey three) designed to eliminate and prevent sex stereotyping, sex bias and sex discrimination in vocational education.

Survey One: State Level Survey

Survey one of this component was designed to access information about state level systems designed to address the target issues. In addition, survey one featured a review of the literature on organizational change in education in order that project staff might devise recommended approaches based on theory and empirical evidence as well as current practice.

The literature review identified five different approaches for inducing change in educational organizations: (a) diffusion,[19] (b) planned change,[20] (c) complex organizations,[21] (d) conflict[22] and (e) technical assistance.[23] The criteria which distinguish these approaches from one another, together with the strengths and weaknesses of each, are presented in Fig. 4, Organizational Change Models. As indicated in the figure, the weaknesses of each model render the use of a single model less than optimal. However, there are non-contradictory strengths within each model that could be combined in an eclectic approach to produce effective results. For example, if a State Education Agency (SEA) were to initiate an approach with the following elements, the strengths of each model would be utilized and the weaknesses minimized:

Survey \ Information	Purposes	Methodology and Respondents
Component One: Surveys of Program Types and Strategies	Develop a data base about current systems, programs and strategies in use nationwide to impact on the target issues.	All projects identified in public information sources, especially those with Federal funding.
Survey One: State Level Survey (state systems)	1. Identify types of approaches in use at the state level. 2. Identify elements supported in research literature. 3. Suggest elements of a prototypic approach.	Review of 12 State Level Programs.
Survey Two: Program Survey (local programs)	1. Identify and quantify emerging trends. 2. Identify characteristics and costs of effective programs.	Review of 92 programs, nationwide exclusive of North Carolina
Survey Three: Local Strategies (strategies within local programs)	1. Identify, quantify and classify strategies proposed by local administrators. 2. Note preferred strategies, needs and areas of neglect.	Review of 40 North Carolina local plans to eliminate sex bias in vocational education.
Component Two: Administrator Assessment of Need	1. Identify and quantify needs, barriers and potential receptivity of administrators to alternative strategies to impact on the target issues. 3. Characterize the present concerns of North Carolina administrators relative to the target issues.	Interview with 21 North Carolina school administrators.
Component Three: Assessment of Student Instructional Materials	1. Assess viability of curricular strategies. 2. Assess the differential impact of the prepared curricular materials on student awareness, attitudes, interests pertaining to the target issues as well as the other cognitive and affective impacts of the materials. 3. Evaluate prepared curricular materials.	Instruction of 850 North Carolina 10th grade social studies students in experimental (pre-post) design with prepared curricula.

Fig. 3. Graphic Presentation of Research Components

ORGANIZATIONAL CHANGE MODELS (Figure 4)		
Model	**Characteristics**	**Strengths/Weaknesses**
1. Diffusion	1. A transfer of ideas between source and receiver called "innovation-decision" process. 2. Phases include awareness, persuasion, decision and confirmation. 3. Primary level of analysis is "innovation" or rate of adoption. 4. A process model examining the progress of a product's introduction. 5. Involves characteristics of message, adopter and innovation.	1. An "after-the-fact" model to describe process. 2. Assumes and/or needs correspondences between sender and receiver ... implied commitment. 3. Only the characteristics of the innovation (advantage, compatibility, complexibility, trialability and observability) useful in planning. 4. Majority of research done with this model.
2. Planned Change	1. Step-by-step intervention planned to achieve a prespecified end ... (usually consensus). 2. Relies on change agent to bring about results in an alien environment. 3. Primary level of analysis is "small groups" and interaction therein. 4. An internal process model that concentrates on personal and group progress. 5. More concerned with group hygiene than productivity ... also ignores environment.	1. A more applied approach than diffusion, conflict or complex organizations. 2. Dependent upon consensus and benevolent self-interest since lacks a support system ... implied commitment. 3. Underplays role of power and use of conflict.

(Fig. 4 continued)

3. Complex Organization	1. An explanatory system useful in comparing different organizations for descriptive and predictive purposes. 2. Variables often include size, formalization, centralization, levels of authority, complexity and environment. 3. Primary level of analysis is conceptual level with correlational variables. 4. A structural model concerned with flexibility and receptivity to innovation.	1. More an explanatory than an applied approach. 2. Assumes variables hold same influence with initiation of same innovation at each site. 3. More refined measurement tools than other models.
4. Conflict	1. By-product of (a) accommodation of upward pressure for change (b) downward compliance requirement. 2. Revitalizes norms, shifting to new ones as boundaries are clarified. 3. Primary level of analysis is "protest absorption" process and rate. 4. A process model, but structural rather than personal in viewpoint. 5. Variables often include degree of involvement, rigidity, isolation, goals, external conflict, centrality of issue and coping strategies.	1. Used as explanatory system, but generally ignored as an applied model because of negative connotations. 2. Assumes inequality creates conflict; usually assumed to be negative. 3. Provides equilibrium maintenance operation. 4. Greater attention to environment than other models.

SYSTEM SCIENCES, INC.

(Fig. 4 continued)

5. Technical Assistance	1. A support system to transfer or broker information and maintain communication about specific problems and solution strategies. 2. Assistance cycle includes liaison, information dissemination, training/ capacity building, and interdiction. 3. Primary level of analysis includes needs assessment, planning, organizational development, content resource development and evaluation. 4. A process model that utilizes product and personality to change structure. 5. Specifics determined by client, problem, budget and resources.	1. Primarily an applied notion than explanatory system. 2. Assumes initiation by the "receiver" and rarely utilizes alternative approaches. 3. Focuses primarily on communication and assumes it will create a positive atmosphere.

Fig. 4. Organizational Change Models

SYSTEM SCIENCES, INC.

1) develop a technical assistance system to broker a wide array of information and expertise;

2) employ the conflict strategy of an overseeing agency such as the state legislature or state board of education mandating certain compliance requirements for vocational education (or all education) at the local level and charging the state education agency with providing whatever assistance is necessary to insure compliance;

3) perform the prerequisite background research identifying the critical structural characteristics of local school systems and student populations in order to construct alternative programs that take local differences into account;

4) develop multiple, alternative local strategies and the flexibility within the technical assistance system that permits compliance to be achieved within the framework of local needs, priorities and conditions; and

5) provide an evaluation system for assessing the relative progress and/or effectiveness of local efforts for overcoming sex bias.

Most State Education Agencies operate using at least one of these elements at present. However, use of these five elements, in combination , would create a system that differs from the models in the literature and the systems in operation on several important points. First, the State Education Agency and the Local Education Agency would be required to become partners in this endeavor. Second, the state agency would no longer be required to await an invitation before making contact with the local agency. Third, the state agency would be required to engineer a variety of approaches from which local educators can choose and adapt a local program which reflects local needs and concerns and uses state personnel as on-going consultants or as brokers to obtain other assistance. Fourth, empirical evidence would be available on which to base and justify decisions. The broad outlines of a comprehensive state program, based on the results from the literature analysis and the field survey are included in "Strategies to Eliminate Sex Stereotyping and Sex Bias," volume two of this final report.

The field survey activity of survey one revealed that when current state level systems were compared to the optimal model derived from the literature, several suggested elements are currently in use; analyses of other programs revealed that most state level programs could be revised

to include elements derived from the change models outlined in Fig. 3. Among those states from which information was collected and analyzed were North Carolina, Georgia, Pennsylvania, New Jersey, New York, Michigan, Iowa, Minnesota, Alabama/Mississippi/Louisiana and Alaska/California/Idaho/Montana/Nevada/Oregon/Washington. In addition, information was collected on several additional programs which could be adapted to become part of a comprehensive state system.

State level efforts included approaches ranging from initiation of a special task force to investigate the current degree of sex bias in area vocational schools to multi-state systems designed to eliminate and prevent sex stereotyping and sex bias in both State Education Agencies and Local Education Agencies. Pennsylvania's efforts, for example, have included the following:

1) An amendment to Article One of the Constitution of the Commonwealth of Pennsylvania prohibits the denial or abridgement of rights because of sex.

2) Executive Order 13 of the Governor of the Commonwealth states that "a major effort will be exerted to end discrimination against all minority groups and women."

3) School Administrators' Memorandum #544 of the Secretary of Education, Dr. John C. Pittenger, commits the Department of Education to making the elimination of sexism in education a priority.

4) Completion of the Joint Task Force Report, "Sexism in Education," has documented the concrete problems of sexism, the recommended policy changes and the programs developed to implement these policies. A different committee was charged with completing the work in each of seven identified problem areas: (a) women's studies in basic and higher education, (b) guidance and counseling, (c) sex-segregated classes, (d) sexism in textbooks and library materials, (e) basic education evaluation, (f) teacher-training and (g) continuing education for women.

5) Passage of affirmative action resolutions and appropriate changes in public school curriculum regulations by the State Board of Education.

6) Completion and distribution of "Self-Study Guide to Sexism in Schools." This "how-to" document is useful to students, school personnel and community citizens. It addresses eight areas of school life--curriculum, instructional materials, libraries,

staffing, guidance and counseling, admissions, extra-curricular activities and the school environment (interaction)-- in addition to a general introduction and a discussion of pertinent legal issues. The guide defines each area as it relates to sexism, suggests how to organize local studies/evaluations of that aspect of school life, recommends what to look for in the study and lists additional resource materials that may be of benefit.

7) The Pennsylvania Department of Education stands ready to provide technical assistance to any local education agency that requests such help.

The Pennsylvania program is more comprehensive than most in that it includes all levels and all aspects of education. When compared to the prototypic model derived from the literature, the system combines elements of technical assistance, compliance regulations, detailed investigations of several problem areas and a rather detailed approach for identifying potential problem areas in schools. Yet even as comprehensive as the Pennsylvania program is, it does not meet each of the five proposed elements for organizational change. For example, while the program does provide a tool for investigating the extent of sex bias in eight different aspects of school life, it neither provides for the quantification of degree of bias nor provides alternative, locally keyed strategies for overcoming bias. Further, while the program does maintain a voluntary clearinghouse of information on local efforts, an evaluation system for assessing local effectiveness and/or progress in eliminating and preventing sex bias has not been developed.

North Carolina's New Pioneers project, currently being transformed into a state level program for all public education -- grades K through 12 -- began as a project to eliminate sex bias in vocational education. The project focused on creating equal opportunity for occupational choice and training for males and females. Operationally, the efforts to create equal opportunity centered on three basic activities:

1) Planning - educators were assisted in developing plans for eliminating sex bias.

2) Staff Development - workshops were developed and implemented for educational personnel; attendance at the workshops provided renewal credit toward certification.

3) Materials Development - among the materials developed during the project were loose-leaf training materials for institutes and workshops; the slide presentation "Special Needs of Disadvantaged Girls"; the filmstrip "I'm Glad I'm A She! I'm Glad I'm A He!"; an annotated bibliography of materials; and a flyer, "Elimination of Traditional Sex Stereotypes in Public Schools - Suggested Directions and Strategies."

The New Pioneers project included several of the elements suggested for a comprehensive program, including technical assistance capacity and development of several strategies to impact on sex bias and sex stereotyping. Additionally, because the program was particularly concerned with enrollment in non-traditional training and because enrollment information by sex was a portion of the State Department of Public Instruction's management information system, the rudiments of a system to assess the relative progress of local efforts were available. To the project's credit, state-wide enrollment figures from project initiation to project completion revealed:

1) Girl enrollment up:

   a) Farm Production 173 to 554
   b) Bricklaying I 16 to 93
   c) Carpentry I 51 to 187

2) Boy enrollment up:

   a) Foods and Nutrition 300 to 571
   b) Housing and Home Furnishings 42 to 102

3) Nearly 1000 more girls in Agriculture program areas and nearly 700 more in Trades and Industry program areas.

4) Nearly 1300 more boys in Home Economics programs.

Unfortunately, while enrollment data was collected and compared, no systematic evaluation of the effects of particular local or state level strategies was initiated. Further, the enrollment figures were not developed as a part of a comprehensive evaluation program that would permit local and/or state administrators to assess progress in eliminating sex bias in vocational education.

Additional activities that would render the New Pioneers project more comprehensive include identification of local characteristics that impact on

sex stereotyping and sex bias, development of a brokerage capacity for a wide array of assistance within the technical assistance framework, the mandating of compliance requirements to stimulate local vocational educators to attend to the target issues and initiation of a comprehensive evaluation program.

A third approach to a state level system to eliminate and prevent sex stereotyping and sex bias is the Educational Equity Model jointly developed by Alabama, Mississippi and Louisiana. Intentionally utopian, the guide was developed as a generic model for State Education Agency personnel to use in initiating activities appropriate to individual SEA's and intended to eliminate and/or prevent sex bias in education. The guide includes a discussion on dealing with sex bias in the internal activities of the SEA as well as a number of suggestions useful to SEA's in assisting LEA's in eliminating and preventing sex bias. The model specifies several procedures for collecting quantified, prioritized background data at state and local levels around which to design alternative programs which take into account local differences. Additionally, the model suggests a number of alternative strategies, any or all of which could be used to eliminate and/or prevent sex bias. Further, these strategies are categorized by areas of concern including: curriculum, course materials, pedagogical practices, co/extra curricular activities, guidance and counseling activities, policies and procedures, employment practices, and publications. The general orientation of the model is such that its implementation constitutes establishment of a technical assistance system. Further, by advocating that the self study which quantifies background data be conducted as an on-going process, the genesis of an evaluation system is suggested. It is noted, however, that the model does not include compliance regulations, but rather assumes the consensual commitment of educators at all levels to the goal of eliminating and preventing sex stereotyping and sex bias. Additionally, the model does not expand the self study specifications to the point of becoming a system for assessing and evaluating relative progress of local efforts for eliminating and preventing sex bias and sex stereotyping.

The North Carolina, Pennsylvania and joint Alabama-Mississippi-Louisiana system, along with program information from nine other states was analyzed for trends among approaches and evidence of relative effectiveness. This analysis suggested the following generalizations:

1) The majority of approaches include specifications and/or suggestions to study the problems of sex stereotyping, sex bias or sex discrimination in their state or in some aspect of their school systems. Such studies range from consideration of the language used in area vocational school descriptions to investigating the special services offered to women at institutions of higher education. Too often, the suggested studies are not combined with specific suggestions for local action based on study results.

2) A particularly popular approach is the self-study technique applicable at state or local levels.

3) Few approaches include specifications for either state level program or local level project evaluation.

4) Few approaches include a state-wide system to assess the relative progress of any LEA in eliminating and preventing sex stereotyping and sex bias.

5) Few approaches include compliance requirements other than the assumption of a "good faith" local effort, based on past Federal legislation.

6) Few approaches systematically address local variables that may impact on the occurrence and characteristics of sex stereotyping and sex bias.

7) Few approaches provide adequate alternatives from which local educators can choose/adapt one or more to meet local needs.

8) Few State Education Agencies view their position to be one of full partnership with LEA personnel in addressing these issues.

In fairness to State Education Agency programs designed to address the issues of sex stereotyping, sex bias and sex discrimination, particularly in vocational education, it is noted that government sanctioned concern for the issues is relatively new and that states have not been made strictly accountable until the Vocational Education Amendments of 1976 take effect and/or the Equal Rights Amendment is ratified.

The last purpose of survey one was to collect information useful in designing a state level program model which would permit SEA's to assist LEA's in addressing the target issues. This information is presented in "Strategies to Eliminate Sex Stereotyping and Sex Bias," volume two of this final report.

Survey Two: Program Survey

The purpose of the second survey was to create an information base about the types of programs in use, nationwide, at the local level to overcome and eliminate sex stereotyping and sex bias. Of particular concern in this survey were trends among these programs, relative effectiveness of the programs and cost. From 125 nationwide programs contacted, information was collected on approximately 90 programs purported to be concerned with more than basic research and directly related to vocational equity. Information permitted comparisons to be made on populations served, services provided/strategies used, program type and program goals/purposes with the following results.

1) Target Populations - Four basic target populations were identified: (a) secondary school students, (b) post-secondary women, (c) persons, usually women, currently outside the formal educational system and (d) professionals in education. To date, the greatest number of programs were designed for persons, particularly women, outside the formal educational system. The target population of the next most numerous programs were professionals in education, followed by secondary students and post-secondary women. The actual numbers are included in Table 2, Services Provided/Strategies Used.

2) Program Type - The program type varies with the target population for those projects reported in the literature. For example, in programs designed for persons, usually women, outside the formal educational system, the two types of projects that were reported were the women's center or counseling center program and the self-help guides on how to identify or assist in ending sexism in a particular situation. In programs designed for professionals in education, the projects were either self-study guides or self-help guides designed to assist students in overcoming sex bias or designed to assist the professional to overcome the effects of bias as practiced against the professional. In programs designed for post-secondary women, the projects were usually either counseling or curriculum projects designed to facilitate employment. In programs for secondary school students, many of the reported projects proved to be primarily research studies. The other

two types of reported projects were career orientation projects devised to broaden career options and choices and curriculum projects which directly addressed the issue of sex bias for and against females.

3) Program Goals/Purposes - The program goals and purposes were of three basic types: (a) provision of specific information, (b) research and (c) provision of specific services. The most frequently cited purpose or goal was the provision of specific information or knowledge to the target population, particularly as that information pertained to the effects of sex bias on persons who belonged to a certain category of persons such as school counselors or employers. The second most frequently cited purpose was basic research information on sex differences and/or the effects of sex bias. This goal was particularly apparent in those programs designed for secondary school students where projects for purposes of research outnumbered curriculum and/or service programs. The least frequently cited purpose or goal was the provision of specific services such as counseling or job placement programs. While this purpose was the predominant goal of post secondary programs, it occurred at the secondary level infrequently, and then only as a career counseling program.

4) Services provided/strategies used-comparisons proved somewhat more difficult than comparisons of target populations and program goals because of the variety and dissimilarity of programs evidenced in the collected information. Project staff devised a comparison method which categorized programs by their primary thrust of services provided/strategy and by target population. When programs employed more than one strategy, the primary one was used; when there was no discernable primary strategy, the programs were not categorized. The strategy categories were as follows:

a) Counseling Programs - Programs, the principal thrust of which focused on providing counseling services, often testing and guidance and usually support, to the target population.

b) Curricular Programs - Programs, the principal thrust of which focused on providing instructional materials on the issues of sex stereotyping and sex bias to the target population.

c) Career Planning/Awareness Programs - Programs, the principal thrust of which was to assist in occupational planning or increase awareness of training options to the target population.

d) Workshops - Projects that focused several days of concentrated, directed instructional activities on the target issues for a particular target population.

e) Conferences and Meetings - Projects of short duration that disseminated information and often served primarily a public relations function.

f) Materials Revision - Projects designed to use and/or upgrade present instructional materials to teach the target population about the issues of sex stereotyping and sex bias.

g) Self-help Information - Projects designed to provide specific, useful information relevant to the position the person occupies, such as counselor of underemployed females, that will assist that role occupant in coping more successfully with the issues of sex stereotyping and bias.

h) Research - Projects performed with/on the target population, the major benefit from which is research information rather than specific services for the target population.

The results of this comparison, for those projects on which information was collected and which lent itself to such comparison, are depicted in Table 2, Services Provided/Strategies Used. The results presented in Table 2 are a more elaborate breakdown of program type and suggest that a fairly broad variety of approaches has been initiated in efforts to eliminate and prevent sex bias in vocational education. No particular strategy was employed in excess of the other strategies with the possible exception of self-help, information strategies for women outside the formal education system and for professional educators. The distribution of several strategies in terms of their target population does point up several paradoxes. For example, even though the vast majority of school superintendents, assistant and associate superintendents, and high school principals are men, there has been almost no attention given to career planning/awareness/upgrading programs for women professionals in education. Similarly, the use of workshops and/or conference type mini-courses for secondary and post-secondary students has not been broached even though this approach might be more effective and less disruptive than many other ways of approaching the issues.

Table 2

SERVICES PROVIDED/STRATEGIES USED

Target Population / Services Rendered/ Major Strategy Used	Secondary School	Post-Secondary Women	Women Outside Formal Education System	Professionals in Education
1. Counseling Programs	1	2	6	0
2. Curricular Programs	5	2	2	2
3. Career Planning and Awareness Programs	6	1	3	1
4. Workshops	0	0	1	3
5. Conferences and Meetings (usually public relations)	0	0	4	5
6. Materials Revision	0	1	1	2
7. Self-help Information (related to position)	0	0	12	11
8. Research (performed on target population)	8	3	3	1

(Each of the 92 programs categorized by predominate target population and services rendered; six not classifiable because of inadequate information.)

Lastly, it is noted that relatively few projects have been concerned with materials revision even though such a program, particularly at the secondary level could be extremely effective in terms of cost, convenience and impact.

Trends in costs and effectiveness could not be discerned from available information. Cost comparisons were eliminated because: (a) cost figures between programs were not comparable, (b) efforts to secure and convert staff time expenditures into cost figures proved unmanageable, (c) the relative newness of some programs inhibited attempts to isolate per pupil costs, (d) divergent target populations complicated attempts to create comparable data, and (e) cost information on some programs was unavailable.

The analysis of trends in effectiveness revealed that either very few present programs have systematic evaluation procedures that quantify effectiveness or the relative newness of current programs has not yet permitted programs to be evaluated. The lack of systematic evaluation procedures was particularly evident in the majority of programs designed for persons outside the formal educational system and those designed for professionals in education. The exceptions to this generalization were workshops developed for professionals in education, each of which did include some evaluation activities although usually not systematic measures of awareness, attitude or content acquisition.

The majority of programs designed for post-secondary women did include systematic evaluation activities. Each of the curriculum and counseling projects at the post secondary level included pretest - posttest assessment activities usually including content, attitude and employment information. Take, for example, the Women's Re-entry to Education Program of San Jose City College. Among the evaluation techniques employed were: (a) pretest, posttest surveys of student attitudes and career education goals; (b) grade point average assessment; (c) attrition rate assessment; (d) informal assessment in staff meetings.

Unfortunately, there were neither sufficient numbers of programs nor sufficient comparative information to permit derivation of the relative

effectiveness of different strategies and programs within each target population. Further, lack of comparable information, together with differences in characteristics of target population and lack of numbers of programs prevented derivation of statistical comparisons of program effectiveness by strategy across target populations. However, analysis of such programs permitted the development of a description of the generic components of an effective program and allowed conclusions about types of program that tended to include such components. Components of the "typical effective program" are included in Fig. 5, Characteristics of an Effective Program. This figure depicts, in capsule form, the best suggestions from current practice relative to devising a local program to eliminate and prevent sex stereotyping and sex bias in vocational education.

Survey Three: Local Strategies

The third survey conducted by project staff in Component One was an investigation of the sex bias elimination plans prepared by local education agencies in North Carolina. These plans were analyzed in order to classify the strategies in use, quantify the preferences of field-based vocational administrators, identify strategies targeted to particular groups, and identify trends and needs in providing such services to students. The results, as depicted in Table 3, indicate that the preferred administrator strategies are predominantly informational strategies. That is, administrators perceive the elimination and prevention of sex bias to result from practices that provide information about sex bias to students, counselors, teachers and other administrators. There is little or no indication that such information would be presented in a certain format or require particular actions or conclusions on the part of the recipient. Rather, the simple provision of the information, such as restating course descriptions, putting information on bulletin boards or in the school newspapers or distributing copies of Title IX, are viewed by administrators as being sufficient to eliminate and prevent sex stereotyping and sex bias in vocational education. There is, however, little evidence to support that a simple provision of such information could or would have the

CHARACTERISTICS OF AN EFFECTIVE PROGRAM	
1. Characteristic:	Formal statements of program purposes, goals and objectives: a) purposes--justified reasons for undertaking the program; b) goals -- expected program outcomes and advantages; and c) objectives -- measurable expectations of accomplishment specified for both administrative and outcome activities.
2. Characteristic:	Fairly narrow thrust in terms of selection of a particular target group such as underemployed women or secondary-level women vocational students in order to concentrate on the particular needs of one group of persons.
3. Characteristic:	A conceptual framework or rationale that matches needs of the target population with components in the program and which justifies such procedures based on theory or empirical evidence.
4. Characteristic:	A match between strategies employed and the accepted "legitimate" function of the parent institution: a) post-secondary level counseling and career awareness appeared particularly successful since such programs fit the legitimate function of two-year schools--that of preparing students for employment and assisting in job placement; b) adult women's centers and workshops were particularly successful since both strategies adhered to the legitimate adult practices of providing information to recipients who initiated contact with the program; and c) secondary curricular programs appeared successful because such programs adhered to the legitimate function of providing instruction and because these programs usually were unobtrusive.
5. Characteristic:	Comprehensive, detailed directions to program implementers about how to use materials or establish and maintain services, thus reducing the importance of administrator and teacher personalities in program success.
6. Characteristic:	Careful attention to assessment and evaluation procedures that provide process and product data. More specifically, procedures that provide feedback about on-going practice for planning purposes and quantified outcome data about the end effects of the program on the target population.
7. Characteristic:	Cost information in per pupil expenditures for planning and accounting purposes.

Fig. 5. Characteristics of an Effective Program

desired impact on the target populations. Programs with strategies that simply provide information such as the self-help programs have not provided systematic evaluation information on program effects.

It is noted that most of the strategies suggested by local administrators are directed at the student target populations. It is further noted that these strategies directed at the student population involve most aspects of the high school program, ranging from use of vocational clubs to student testing.

The strategies suggested for counselor, teacher and administrative personnel in the school systems each involved in-service programs to provide information to upgrade that professional's understanding of the issues and to assist that individual in better meeting the needs of students. It is noted that follow-up conversations with a sample of the administrators who designed these local plans suggests that currently all such in-service programs and materials must emanate from the State Department of Public Instruction. Local administrators do not have materials pertinent to the subject nor information about where to secure such materials. It is further noted that while the implementation of curricular materials designed to impact on overcoming and eliminating sex bias was mentioned by each administrator interviewed, this strategy did not appear regularly on the local plans because such student-based curricular materials were not available for use at the local level.

Rarely were the strategies designed for students or other personnel constructed as a systematic program; rather, planning efforts assumed the "shotgun" approach. Further, measurable objectives, purposes and evaluation often were given little attention.

Component Two: Administrator Assessment of Need

The administrator assessment of need was designed to collect data on (a) the needs, and (b) the receptivity of vocational education administrators in North Carolina to alternative strategies and approaches for eliminating and preventing sex stereotyping and sex bias.

Table 3

LOCAL STRATEGIES TO ELIMINATE/PREVENT SEX BIAS

Target Group	Strategy	Frequency
Student		
1.	Revise course descriptions	27
2.	Use school bulletin boards and newspapers for notices and requests	26
3.	Encourage youth organizations to recruit both sexes equally	18
4.	Encourage discussion of sex bias in at least one meeting of all clubs	11
5.	Use new sex bias-free materials; look for bias in old materials	10
6.	Utilize speakers who hold non-traditional occupations	10
7.	Student poll of sex bias awareness and attitudes	8
8.	All students tour vocational education facilities	6
9.	All students tour local businesses	6
10.	Replace courses directed toward one sex	6
11.	Eliminate sexist language and/or practices from club ceremonies	6
12.	Show films on sex discrimination and its relationship to jobs	2
13.	Hold seminars on sex bias	1
14.	Hold junior high seminars on sex bias	1
15.	Develop women's study course	1
16.	Describe dress code	1
17.	Use media-related "success" stories in non-traditional occupations	1
18.	Test all students (interest and ability tests)	1
Counselor		
1.	In-service programs and materials to update information base of counselor	13
2.	Increase counselor visits to encourage equal opportunity for all	6
3.	Provide Title IX information	5
Teacher		
1.	Provide Title IX information	18
2.	Distribute and discuss materials from State Department of Public Instruction at faculty meeting	17
3.	In-service programs for information, strategies and materials	12
4.	Conduct attitude/awareness measure of teachers	2
5.	Develop teacher materials on equal opportunity for all	1
6.	Visit classes of potential students	1
7.	In-service for teachers who teach traditionally sex-biased classes	1
Administration		
1.	Establish Advisory Committee or Task Force to study problem	14
2.	Provide staff copies of Title IX	8
3.	Evaluate teachers' effectiveness	6
4.	Hold in-service workshops for administrators	5
5.	Present "open door policy" to entire staff until sold	3
6.	Utilize local ERA and/or Office of Civil Rights person	2
7.	Utilize other community resources	2
8.	Recruit non-traditional teachers	1
9.	Check yearly enrollment data and note changes	1
10.	Redesign/adapt facilities for both sexes	1
11.	Enlist media assistance for information and coverage	1

The Administrator Guided Interview was divided into three parts: general information; barriers and needs; and strategies. Results of the general information section of the interview revealed that each of the school systems selected for this portion of the research study had a designated Title IX coordinator who devoted from 20% to 100% of their time to issues of women's equity. As would be expected, the larger the system, the more time devoted to this particular issue. In addition to each of the systems having a Title IX coordinator, each indicated that they had an acceptable grievance procedure, should a claim be filed by a student or a student's parents. However, only one of the administrators interviewed indicated that they had had such a claim either filed or threatened.

The vast majority of vocational education administrators interviewed during this research component indicated their awareness of the two North Carolina programs designed to assist local systems to overcome and prevent sex stereotyping and sex bias in vocational education. Further, 80% of those administrators who indicated an awareness of either the New Pioneers Program or the Technical Assistance Center Program indicated that they had used or at least had been in contact with one or the other of these projects. While it was not possible to determine who initiated the contacts, the principal characterization of the communication was one in which one or the other of the projects offered assistance to the local administrator pertinent to providing information on sex bias and sex stereotyping to instructors in the local system.

Community contact, however, was an entirely different matter. Few administrators indicated either the occurrence of a conversation or a willingness to initiate a conversation about sex discrimination regulations with companies, particularly those in the immediate community with which the school system has contractual agreements.

The questions on barriers and needs revealed that the primary needs expressed by administrators relative to the issues of sex stereotyping, bias and discrimination in vocational education were as follows. The principal need was one for information for themselves, their staff and their

teaching staff relative to the issues at hand, particularly concerning Title IX. Further, there was uniform concern for the training of instructional staff in non-sex stereotyped or non-sex biased procedures for use in the classroom. However, that training, in terms of money and expertise, uniformly was expected to come from outside the system; local administrators expressed reluctance, inability or unwillingness to accept such in-service activities as a legitimate local system obligation. In particular, administrators requested materials and information for each target group -- students and teachers -- which met current specifications to be followed in order to demonstrate compliance with federal and state laws.

The second most urgent need voiced by administrators was the need for an unobtrusive intervention strategy, particularly one that was related to their basic tenets of education and could be absorbed into the regular curriculum rather than a program that drew a great deal of attention or required inordinate amounts of implementation time and effort.

The third major need singled out by vocational education administrators was the need for a system against which they could compare local progress in overcoming the problem. While they voiced disapproval of compliance-based systems, they suggested that state assistance was needed in developing a statewide measurement program to ensure that local systems were meeting federal and state legal responsibilities. It is noted that the majority of local vocational education administrators opposed the use of enrollment figures in such a system because (a) it imposes a burden and (b) they indicated that enrollment figures bear no direct relationship to overcoming sex stereotyping, sex bias and sex discrimination in the world of work. In fact, enrollment in nontraditional courses could result from blatant reverse discrimination.

A random sample of 21 administrators were asked to list the five most potent barriers to implementing a successful program to eliminate and prevent sex stereotyping and sex bias in vocational education. These barriers, ranked according to frequency and importance are presented in Table 4, Program Barriers As Perceived By Administrators, on the following page.

Table 4

PROGRAM BARRIERS
AS
PERCEIVED BY ADMINISTRATORS

	RANK BY FREQUENCY OF RESPONSE				
	Geographic Region			Type of System	
Barriers	Coastal	Piedmont	Mountains	County	Municipality
Community negative reaction	1	6	1	1	6
School system negative reaction	8	1	9	9	1
Lack of appropriate student materials	3	2	2	2	3
Lack of staff information	2	3	3	3	2
Federal and state regulations	4	9	7	5	9
Assessment and evaluation difficulties	9	5	5	6	4
Lack of funds for materials/staff development	5	4	4	4	5
Instructors lack training or know-how	6	7	8	8	7
Lack of support services	10	8	10	10	8
Family/student aspirations or conditions	7	10	6	7	10

As depicted in the table, public relations issues were the most critical barrier indicated by local vocational educational administrators. Interestingly, however, the specific type of reaction varied between systems with rural educators voicing more concern about community resentment and urban educators voicing more concern about staff resentment.

The second major barrier or concern pointed out by local administrators was the information lack, both in terms of information for their teachers and, more specifically, in terms of the lack of student materials pertinent to overcoming the problems created by sex stereotyping and sex bias in vocational education.

Other barriers of particular concern were lack of funds for specific use in addressing the target issues and difficulty with assessment and evaluation procedures for use in such programs. Interestingly, there was a fairly widespread feeling that vocational education had been unfairly singled out as a target group upon which was placed more stringent conditions than other subject areas in public education. This suspicion contributed to a fairly uniform distrust and resentment of federal and state compliance requirements, especially in rural systems.

The third part of the Administrator Guided Interview focused on general information pertaining to the issues of sex stereotyping and sex bias. Unfortunately, this material was not particularly conducive to the interview format and only sketchy data was collectable. Among the findings resulting from these questions were: (a) class enrollments, curricular content/course offerings in vocational education, hiring and promotion of staff, and athletics emerged as the four areas of greatest concern relative to sex stereotyping and sex bias; (b) guidelines on salary, promotion and hiring procedures together with teacher and student materials about sex bias and sex stereotyping are the most important information needs of local administrators; and (c) local administrators are rather unfamiliar with general knowledge items about sex bias and sex stereotyping.

Component Three: Assessment of Student Instructional Materials

Project staff created three different sets of classroom-based curricular materials, each based on a different concept of change, each presenting information on sex stereotyping and sex bias in the world of work and each designed for all students. Each set of materials was developed as an alternative strategy for eliminating and preventing sex stereotyping and sex bias in vocational education. Further, each strategy was designed to merge easily with ongoing school curricula and to meet the felt need of school administrators for unobtrusive strategies.

The three sets of curricular materials, together with their respective conceptual framework for change were:

1) Eliminating Sexism: Rewriting the Scripts ... An Informational Guide to Sex Stereotyping, Sex Bias and Sex Discrimination. These materials, designed according to the aforementioned empirical-rational model of change, were constructed as a self-instructional package of student materials that addressed a number of topics relative to sex bias in the world. Among topics of consideration were male-female differences, bias in the "work-a-day world," bias in the school, bias and minority groups and sex discrimination and the law.

2) Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook. These materials, designed according to the aforementioned normative-reeducative model of change, were constructed as a discovery learning package of student materials that required students to collect/analyze factual information and draw conclusions about topics relative to sex bias in the world of work. Among the topics of consideration were the value of work, bias on the job, beliefs about working women and men, and bias in the search for employment.

3) In Search of a Job: A Simulation Activity in Occupational Decision-Making. These materials, designed according to the aforementioned power-coercive model of change, were constructed to project students into life-like situations of group decision-making within the political and economic constraints that relate to sex bias in the world of work. Among the topics of consideration were how to seek out and secure jobs, family and employer decisions, how to analyze jobs and job descriptions of various occupations for potential bias.

The particular concerns of Component Three were questions about the viability of curricular strategies in general, and these three in particular, to impact on the target population. More specific questions included analysis of the effects of such strategies on the target population as well as subsets within that target population; the differential effects of curricula designed according to discrete concepts of change; the ability of the materials to address not only the issues of sex stereotyping and sex bias but also to impart

additional cognitive and affective information; and student and teacher evaluations of these materials.

Curricular Strategies as Alternatives for Overcoming Sex Bias

Measures of the impact of the three sets of curricular materials included pretest-posttest assessment of student awareness, interests and attitudes pertaining to sex stereotyping and sex bias in the world of work. Awareness was addressed by appraising student opinion about who could and should hold which jobs, according to gender; by assessing student judgments about the relative importance of particular occupations; and, by surveying student knowledge about the issues of sex stereotyping and sex bias.

Students were presented with a list of 25 occupations and were asked to indicate, for each occupation, who they thought could and should hold that job. The possible responses were male, female or both. After treatment, the students were again asked to indicate who could and should hold each job. The responses for this assessment are presented in Table 5, Comparative Shifts of Student Awareness in Job/Sex Classification, the table depicts the percentage of students who indicated that the listed occupations could and should be held by both females and males.

Variations in the numbers of valid responses restricted statistical comparisons of this data as well as discounted this measure as an indicator of student attitude. The range of valid responses varied from a high of 99% across all assessments on items such as nurse and high school teacher to a low of 70% on items such as dental hygienist and small business owner. Fortunately, the response rate was greatest for those occupations traditionally considered to be female or male occupations such as nurse, electrician, executive secretary, receptionist, career military personnel, hairstylist and truck driver; each of these occupations achieved a response rate in excess of 98% across all treatment groups and all pre- and post-assessments.

It is noted that the absolute number of students who indicated that occupations could and should be held by both males and females increased between pre- and post-assessment for each treatment group and for virtually

Table 5

COMPARATIVE SHIFTS OF STUDENT AWARENESS IN JOB/SEX CLASSIFICATION

(Percentage of students indicating occupations suitable for both sexes)

Strategies / Jobs	Pretest (All Respondents)	All Treatment Strategies	Posttest Only	Pretest	Pretest-Posttest Only Posttest	Pretest	Eliminating Sexism: Rewriting the Scripts Posttest	Pretest	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook Posttest	Pretest	In Search of a Job: A Simulation Activity in Occupational Decision-Making Posttest
Career Military Officer*	45	54	45	44	45	44	50	42	57	48	54
Sales Clerk	82	85	82	80	80	79	81	80	87	82	87
Mail Carrier	55	63	56	53	53	52	59	56	67	59	64
Medical Doctor	73	81	75	69	69	68	74	73	86	77	84
Social Worker	76	83	75	74	73	67	76	77	84	84	89
Scientist	83	81	84	83	82	80	79	83	81	80	89
High School Teacher*	91	96	92	90	90	91	95	91	95	92	99
Small Business Owner	79	81	80	79	82	79	78	80	78	80	90
Executive Secretary*	29	48	31	27	35	26	45	26	45	33	54
Police Officer*	51	65	52	51	56	51	62	51	65	54	67
Computer Programmer*	72	83	70	74	72	75	76	72	89	68	84
Receptionist*	31	47	30	31	33	30	46	31	45	30	51
Clergy*	43	50	44	46	50	37	48	40	41	46	51
Journalist/Reporter	87	91	87	86	86	84	86	90	95	93	91
Hairstylist*	69	76	67	70	72	73	76	69	72	63	81
Elementary School Teacher	73	80	78	76	80	70	70	70	83	79	86
Accountant	74	82	75	73	72	71	77	76	85	74	85
Dental Hygienist	62	75	58	64	64	50	68	67	75	70	82
Electrician*	29	42	27	32	32	27	35	26	38	33	52
Nurse*	33	45	33	34	36	32	36	35	43	33	56
Lawyer*	63	71	62	64	65	57	58	67	72	67	80
Truck Driver*	36	46	37	37	38	41	45	33	41	34	53
Career Military Enlisted*	55	74	53	59	60	55	63	59	78	57	82
Entertainer	88	91	90	90	89	87	87	87	95	92	93
Dietician*	56	82	55	54	57	55	80	53	82	53	89

*Response rate on pre- and post-assessment exceeded 96% of students and approached 175 responses in each pre- and posttest group. Increases for treatment groups, using responses on these items only, were significant at the .01 level of confidence.

every occupation; however, the low percentage of students which responded to some items rendered those items unreliable. Of the 25 listed occupations, 14 occupations achieved a valid response rate of 96% as each of the pre- and post-assessments. A 96% response rate means that the number of valid responses approached 175 for each pre- and post-assessment.

Examination of the gain scores between pre- and post-assessment indicated sizable increases in the numbers and percentages of students who indicated that jobs could and should be held by both males and females. These increases were evident for each of the three curricular strategies. The increases were particularily noticable for those occupations that have traditionally been considered moderate to low status and predominately female or male occupations such as nurse, electrician and executive secretary. However, increases were not limited only to this group of occupations; they were also noted for high status occupations such as lawyer and doctor. When the increases within each treatment group for those fourteen occupations that achieved a response rate above 96% were compared, using both the Test of Least Significance and the Dunnett's Procedures, with the responses from the posttest only and pre- and posttest only groups, differences between treatment and nontreatment groups were found to be statistically significant at the .01 level of confidence for each treatment group. When responses for all 25 occupations were used, only the responses from students using the materials, "In Search of A Job: A Simulation Activity in Occupational Decision-Making" and "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook" were found to be statistically significant.

It is noted that students who used the materials entitled "In Search of a Job: A Simulation Activity in Occupational Decision-Making" consistently responded with, (A) a higher percentage and number of students who indicated that each and all occupations could and should be held by both females and males than did students who used either of the other sets of materials.

Awareness also was measured by asking students to rank the 25 occupations according to occupational importance on a four-point scale--from "very important" to "not very important". Results followed a similar general pattern to that established by students in the responses about who could and should hold each occupation. That is, there was a general increase in the importance of all occupations. However, the overall increase was slight and several occupations, such as doctor and lawyer, which always have been considered high status occupations, registered no increases. To the degree that there were significant increases in occupational awareness, they were registered in the traditionally low status, traditionally male or female occupations of truck driver, hair-stylist and executive secretary. For example, the overall pretest score for executive secretary was 1.0 out of 4.0, while the posttest score was 1.57 out of 4.0.

The "occupational status" measure suffered identical but more exaggerrated data problems than the "job occupants" measure; statistical comparisons were rendered unadvisable by the number of missing cases among occupations and between paired assessment groups. However, inspection of the data again indicated that the greatest gains were registered in traditionally female dominated occupations and resulted through the use of the simulation activity, "In Search of A Job: A Simulation Activity in Occupational Decision-Making."

The third measure of student awareness was a cognitive measure of awareness in which students were asked to indicate new knowledge they had learned during the course of using the materials. This knowledge was divided into factual information, skills and opinions. The opinions were classified as measures of attitude rather than awareness. The results of this assessment are presented in Table 6, Perceived Cognitive and Affective Impacts Pertaining to Sex Bias. The items listed in the table appeared on over 20% of student responses and are listed in descending order of response frequency. As indicated by the number of responses listed on the table, the self-instructional materials, "Eliminating Sexism: Rewriting the Scripts," had a greater impact on student cognitive awareness than did the other two strategies. However, all strategies impressed on

Table 6. PERCEIVED COGNITIVE AND AFFECTIVE IMPACTS PERTAINING TO SEX BIAS

Materials / Impacts	Eliminating Sexism: Rewriting The Scripts	Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook	In Search of A Job: A Simulation Activity In Occupational Decision-Making
Information	1. Sex stereotyping, bias and discrimination are real. 2. Earnings and responsibility discrepancies exist. 3. Provisions of the law provide relief. 4. Ways in which women and men are alike and are different. 5. Equal right to work is basic. 6. Assorted facts on women. 7. Minorities suffer double discrimination.	1. Sex stereotyping, bias and discrimination are real. 2. Earnings and responsibility discrepancies exist. 3. Sex bias also affects males. 4. Behavorial expectations and stereotypes are held by everyone. 5. Facts about men and women workers.	1. Sex stereotyping, bias and discrimination are real. 2. Equal opportunity to work is basic. 3. Pay discrepancies sometimes exist for females and males.
Skills	1. Analyze jobs for bias. 2. Treat all people more equally. 3. Address personal stereotypes. 4. Recognize behavioral expectations.	1. Recognize instances of sex stereotyping and bias in want ads, applications, T.V., interviews, etc. 2. Interact with all people more honestly in order to solve problems. 3. Recognize, understand and overcome personal stereotypes.	1. Recognize instances of sex stereotyping and sex bias in want ads, applications and interviews. 2. Treat people equally in reaching joint decisions. 3. Treat people more open-mindedly.
Opinions	1. Women and men are equal and deserve to be treated that way. 2. Women are entitled to hold any and all jobs. 3. Men and women are alike on the job. 4. Must be more open-minded about people.	1. Women and men are equal and deserve to be treated that way. 2. Right to work is basic for all citizens. 3. All work is real work and can be a source of pride for women and men. 4. No longer underestimate women or overestimate men. 5. Men and women more alike than different. 6. Law and concerted action can overcome injustices based on sex.	1. Many factors other than qualifications enter job offers. 2. Men and women have equal rights, especially to work. 3. Women are not disqualified for jobs simply because they are women. 4. Reverse discrimination is possible.

students the fact that sex discrimination is real and that the equal right to work is basic for all citizens.

Student attitudes pertaining to sex stereotyping, sex bias and sex discrimination were assessed by means of the opinions expressed by students concerning new knowledge acquisition and by means of a set of questions on the pre- and post-assessment instruments.

As depicted in Table 6, student opinions as well as knowledge and skills, were influenced through use of the materials. Of particular note was the realization that men and women must be treated equally and that women are both entitled to and equally capable of holding all jobs with men. It is noted that students who used the student workbook "Sex Stereotyping, Sex Bias and Sex Discrimination in the World of Work: A Student Workbook," registered both more opinions and a greater frequency of response for registered opinions than did students who used either of the other two sets of materials.

A second attitude measure was derived by asking students to respond to a general set of questions regarding work, some of which addressed attitudes related to sex bias. Student responses to these questions are presented in Table 7, "Student Attitudes." The numbers depict the frequency distribution of student responses by percentage within each assessment group. Notably, in this set of questions there were few missing cases with the response rate for each question and across each group of students exceeding 95% and approaching 175 responses per assessment group.

As noted in the table, use of the materials had an impact on student attitudes about women in the world of work. For example, a significant percentage of students changed their attitude about whether or not women should hold positions of authority over men. During the pretest, 38% of all students agreed or agreed strongly with the statement that women should not be in positions of authority over men. After using the materials, only 32% of the students still held to such positions. Similarly, during the pretest, 35% of all students disagreed or strongly disagreed with the statement that women live under unfair restrictions that ought to be done away with. During the posttest, only 29% of the students still held that view.

Table 7 . SHIFTS IN FREQUENCY DISTRIBUTIONS OF STUDENT ATTITUDES RELATED TO WOMEN AT WORK

Attitudes Related to Sex Bias / Strategies		Pretest	All Treatment Strategies	Posttest Only	Pretest	Pretest-Posttest Only	Posttest	Pretest	Eliminating Sexism: Rewriting the Scripts	Posttest	Pretest	Bex Stereotyping, Bias and Discrimination in the World of Work: A Workbook	Posttest	Pretest	In Search of a Job: A Simulation Activity in Occupational Decision-Making	Posttest
1. Women think less clearly than men.	Agree Strongly	9	3	9	8	7		11	6		8	2		10	2	
	Agree	14	15	14	15	16		11	15		10	12		15	17	
	Disagree	43	48	45	40	42		44	47		46	49		37	48	
	Disagree Strongly	34	34	32	37	34		34	32	*	36	36	**	38	33	**
2. Women should be restricted in certain ways in which men have more freedom.	Agree Strongly	11	6	11	11	10		8	4		10	5		6	2	
	Agree	27	27	27	27	26		26	26		27	23		25	33	
	Disagree	40	40	40	39	40		39	45		44	45		42	33	
	Disagree Strongly	23	28	23	23	24		27	25	**	19	27	**	27	32	**
3. Women should not be in positions of authority over men.	Agree Strongly	14	8	14	13	12		11	7		12	2		19	14	
	Agree	22	25	22	24	25		18	28		31	24		17	17	
	Disagree	37	46	36	35	37		43	45		34	55		36	45	
	Disagree Strongly	27	21	28	28	26		28	20	**	22	19	**	28	24	**
4. Even today women live under unfair restrictions that ought to be done away with.	Agree Strongly	20	15	21	20	18		22	11		22	17		17	16	
	Agree	45	56	45	44	47		45	62		50	55		42	52	
	Disagree	28	23	27	28	28		29	21		21	22		33	26	
	Disagree Strongly	7	6	7	8	7		4	6	**	7	6	**	8	6	**
5. A man needs a job to be happy.	Agree Strongly	11	11	11	11	10		11	11		12	8		8	11	
	Agree	43	44	45	43	45		37	36		46	39		49	63	
	Disagree	37	37	38	39	39		44	43		36	45		30	20	
	Disagree Strongly	8	8	6	7	6		8	10		6	8		13	6	
6. A woman needs a job to be happy.	Agree Strongly	4	5	5	4	3		5	5		2	5		3	2	
	Agree	30	30	30	30	30		33	28		27	25		30	39	
	Disagree	49	59	51	48	52		53	64		52	63		51	50	
	Disagree Strongly	16	6	14	18	15		9	3		19	7		16	9	

(A) Distributions shifted significantly at the .05 (*) level of confidence and the .01 (**) level of confidence.

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Chi Square tests were applied to the frequency distributions to determine if each posttest distribution varied significantly from the respective pretest distribution as well as from the posttest only and pretest/posttest only distributions. Findings suggested that the impacts for each of the treatment groups on questions 1, 2, 3 and 4 were significant at the .01 level of confidence with the exception of question 1 for the treatment group which used the materials "Eliminating Sexism: Rewriting the Scripts." This distribution differed with a confidence level of .05.

By converting the frequency distributions to numerical scores for the responses for each question, a comparison of the differential effects of each set of materials was achieved. Using the Duncan Multiple Range Test, the mean average response for each question by each treatment as well as the set of questions by each treatment, were compared. Results indicated that, when tested by individual questions, there was no difference by average response for various treatments. When a composite test was applied, the means were significantly different at the .01 level of confidence. When the test of least significant differences was applied to these results, the mean of the students using the simulation materials was found to be significant at the .01 level and that of the student workbook group of students at the .05 level.

Combining the results of all attitude measures, staff concluded that the materials entitled, "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook" which was designed to force students to collect data and draw conclusions about their own attitudes, had a consistently greater impact on student attitudes than did the other two sets of materials.

Student interests were also a topic of concern. Students were asked to indicate which jobs they were and were not interested in holding among the list of 25 occupations used to assess awareness. Comparison of pre- and post-assessment responses of students indicated little change in student interest level. Only in the group of students using the simulation activity was any change noticeable, and that change was more likely due to the job descriptions included in those curricular materials rather than to any other cause.

Findings were examined also to determine if the material had differential effects on female and male students or on vocational education and nonvocational education students. Examination of pre- and post-assessment responses on the awareness measures of who could and should hold jobs as well as the relative importance of jobs revealed no differences between the impacts on these groups of students. Likewise, few differences were revealed in the quantitative questions concerning student attitude; pre- to post-assessment shifts in attitude were general across all groups for all materials and for each set of materials. The possible exception to this generalization was noted in the question concerning whether women should be in positions of authority over men. While pre- and post-assessment comparisons revealed no difference in impact for vocational education and nonvocational education students, differences were noted between female and male responses. More specifically, for this particular question, the shift in distribution from strongly agree and agree to disagree and strongly disagree is entirely attributable to female students except for those students who used the Student Workbook materials; for these later students, the shift was attributable to both male and female students.

There were male and female as well as vocational education and nonvocational education differences reported in the perceptions of student cognitive and affective impact of the materials. These differences are anecdotal in nature and primarily serve to point out how different daily life experiences help to shape perception. For example, vocational education students were attuned to information and activities pertaining to analyzing jobs, differences in pay and improving their general attitude toward work, especially their own jobs. Nonvocational education students reported learning more about sex stereotyping in all types of situations, noting differences between females and males and acquiring skills related to securing a job.

Results also suggested perceptual differences between males and females. Females, for example, reported noting information (a) verifying equality between males and females, (2) quantifying pay differences, (3) instructing them on how to bring charges of discrimination and (d) teaching skills related to securing a job. Males reported noting information (a) verifying that sex stereotyping, bias and discrimination are real, (b) verifying that equal opportunity to work is basic and (c) suggesting ways of treating all persons more equally.

Additional Impacts on the Target Populations

In addition to impacting on student awareness, attitudes and information about the issues of sex stereotyping, bias and discrimination, the materials had other cognitive and affective effects as well. These effects fell into the categories of knowledge/opinions and work values.

The knowledge/opinions imparted to students through use of the materials were of three basic types: factual information, skills and opinions. Table 8 depicts the new knowledge imparted through each set of materials. It is noted that all items reported in the table were listed by at least 15% of the students using the designated set of materials.

While responses concerning these cognitive impacts on students varied slightly according to the materials used, the responses did not vary by sex or by participation in vocational education. Instead, responses suggested the cognitive impacts were uniform across each group using each set of materials.

The second area in which there were additional effects was in the area of work values. As noted in Table 8, a frequently cited opinion was the realization that there is pride in all work. Often this opinion was expanded by the respondents to indicate that through working with the materials, the respondents' attitude about their own jobs had been improved. This was particularly true for students who used the materials entitled, "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook." Over 20% of the approximately 175 students who used these materials indicated that use of the materials improved their attitude about their own jobs.

Table 8

OTHER COGNITIVE IMPACTS ON STUDENTS			
Materials / Impacts	Eliminating Sexism: Rewriting the Scripts	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook	In Search of a Job: A Simulation Activity in Occupational Decision-Making
Information	1. Right to work is basic 2. Women and minorities suffer similar discrimination 3. Assorted factual information	1. Right to work is basic 2. Behavioral expectations are held by everyone 3. Assorted factual information	1. Right to work is basic 2. Job descriptions for occupations 3. Many factors enter into job decisions
Skills	1. Treat people more open-mindedly 2. Recognize behavioral expectations 3. Improve reading/ increase vocabulary	1. Gather facts and draw conclusions 2. Read want ads and applications 3. Interview	1. Read want ads and file applications 2. Make group decisions 3. Interview and be interviewed
Opinions	1. Environmental factors are critical 2. Every citizen can use the law 3. Work is a necessity	1. Conclusions are based on information array 2. There is pride in all work and my work 3. Resolve to treat people and self more honestly	1. There is pride in all work 2. Joint decisions require compromise 3. Finding the right job can be complicated

Other measures also indicated a strengthening of work values as a result of using the materials. For example, even though the job importance rating revealed rather minor influences on student awareness and attitude with regard to sex bias, it did indicate that all three strategies increased the tendency of respondents to upgrade the importance of all jobs. While the relative increases were generally not found to be statistically significant, the increases were consistent, particularly for those jobs which did not rank high on occupational status scales.

The materials entitled, "In Search of a Job: A Simulation Activity in Occupational Decision-Making," were particularly effective in increasing student valuation of work. This finding was demonstrated in terms of

students expressing a desire to find employment, particularly employment suited to their own skills. The finding was reinforced by the responses on student attitude questions where students who used the stimulation activity consistently increased their agreement with questions such as, "people should get excited about their jobs" and "people can actually get ahead through hard work."

Evaluation of the Materials

A portion of the posttest assessment asked students to evaluate the set of materials they used in terms of degree of difficulty, overall opinion, their reaction to the materials and their recommendations concerning use of the materials. Quantified results of this evaluation are presented in Table 9, "Student Evaluation of Materials." As depicted in this table, the majority of students using each set of the materials indicated that the materials were of average difficulty in terms of vocabulary, sentence structure and information when compared to their other classroom instructional materials. Further, the vast majority considered each set of materials average or better than their regular classroom materials, on the whole. It follows that the vast majority of students recommended these materials for use by other students.

Teacher evaluation of the materials held close correspondence with student evaluations. The only disparaging comments registered by teachers concerned some of the vocabulary in the self-instructional materials, "Eliminating Sexism: Rewriting the Scripts," and some initial difficulty in involving students, particularly male students who worked, in the simulation activity. Similar comments were voiced by students in that the area of vocabulary in the self-instructional materials was judged to be the area of greatest difficulty. The group of students that were difficult to involve in the simulation activity, male vocational education students who already held jobs, constituted the primary group of students who did not recommend those materials because (a) they viewed the exercises as unimportant since they held jobs; (b) because they thought the simulation resulted in women being offered positions they did not deserve.

Table 9

STUDENT EVALUATION OF MATERIALS

Materials / Questions	Eliminating Sexism: Rewriting the Scripts	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook	In Search of a Job: A Simulation Activity in Occupational Decision-Making	All Instructional Materials
1. What is your opinion of the overall value of the materials?	4% excellent 50% good 43% fair/average 3% poor	9% excellent 52% good 34% fair/average 5% poor	8% excellent 53% good 31% fair/average 8% poor	7% excellent 52% good 36% fair/average 5% poor
2. What is your opinion about the words (vocabulary) used in the materials?	4% too difficult 28% difficult but acceptable 59% average 9% simple	2% too difficult 22% difficult but acceptable 68% average 8% simple	2% too difficult 14% difficult but acceptable 79% average 5% simple	3% too difficult 21% difficult but acceptable 69% average 7% simple
3. What is your opinion about the sentences used in the materials?	0% too difficult 16% difficult but acceptable 76% average 8% simple	2% too difficult 21% difficult but acceptable 74% average 3% simple	4% too difficult 14% difficult but acceptable 79% average 3% simple	2% too difficult 16% difficult but acceptable 77% average 5% simple
4. What is your opinion about the information contained in these materials?	2% too difficult 8% difficult but acceptable 80% average 10% simple	2% too difficult 15% difficult but acceptable 80% average 3% simple	3% too difficult 17% difficult but acceptable 75% average 5% simple	2% too difficult 14% difficult but acceptable 79% average 5% simple
5. Would you recommend these materials for other students like yourselves?	86% yes	88% yes	75% yes	84% yes

Key: excellent (far better than regular classroom materials)
good (somewhat better than regular classroom materials)
fair (average compared to regular classroom materials)
poor (worse than regular classroom materials)

too difficult (much more difficult than most materials used in my classes)
difficult but acceptable (slightly more difficult than most materials used in my classes)
average (about the same as most materials used in my classes)
simple (easier than most materials used in my classes)

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In terms of additional student reactions to the materials, the majority of students indicated that they had some previous familiarity with information pertaining to the target issues and few of them, with the exception of the previously mentioned male students who held jobs, registered any degree of disturbance in using the materials. However, approximately half of the students did register some surprise at factual information contained in the materials, particularly the effects of sex stereotyping and sex bias on males and the differences in earnings and types of employment between males and females.

It is also noted that the materials, including the assessments, were favorably received by administrators after initial concern over the pretest. This acceptance is attributable to the relative unobtrusiveness of the strategy in terms of its "fit" with (a) existing curricula, (b) the legitimate functions of secondary education and (c) the felt need for stealthy strategies with regard to potential community negative reaction.

IV. CONCLUSIONS AND CONSIDERATIONS FOR FUTURE ACTION

Given the goals and objectives of this research activity, the tasks and approaches devised to meet those goals and objectives, and the results achieved through analysis of collected data, the following conclusions have been derived.

Component One: Surveys of Program Types and Strategies

The findings derived from the three surveys of systems, program types and strategies make it clear that the current state-of-the-art of program development in projects designed to eliminate and prevent sex stereotyping and sex bias in vocational education is in initial stages. The absence of a large absolute number of programs, combined with the relatively underdeveloped nature of many existing programs bear witness to the newness of the topic and paucity of pertinent research and/or field-based literature. Further, existing programs are of comparatively low priority when compared to other school programs.

While several excellent programs have been initiated in states such as Pennsylvania, Minnesota, Iowa and North Carolina, operational programs at either state or local levels were irregular at best. Even within the existing state level programs, there were few indications that comprehensive systems had been developed to eliminate and prevent sex stereotyping and sex bias in vocational education. There had been little attention given to matters such as designing a state level data system for assessing relative progress, developing a wide array of approaches for local educators to use, or securing compliance requirements that serve to stimulate educators in both state and local education agencies.

At the local level, the same characteristics of newness, lack of priority and scarcity of information were in evidence. While a variety of approaches did exist, the absolute number of programs was not very large; further, information about those programs in existence had not been widely distributed.

More critically, survey findings suggested that local plans to eliminate and prevent sex bias too often could be characterized as lists/descriptions of isolated activities rather than either programmatic approaches or integral components of ongoing school programs. This situation was evidenced in the findings through a number of paradoxes. For example, even though administrators indicated that they felt they did not possess the resources to implement effective programs, findings indicated that little attention had been devoted to estimating the costs involved and obtaining the necessary resources. Similarly, findings revealed that program evaluation was a major need and area of concern, but few existing programs had been systematically evaluated. It is noted that the exceptions to these generalizations were programs designed for post-secondary women.

The lack of priority for programs addressing the target issues was also evident through the apparent, relative inattention given to potential innovativeness in program design. Simple and inexpensive programs which address the target issue through having students and teachers analyze/revise their own school's instructional and descriptive materials were largely ignored. Further, such fundamental program notions as specifying measurable administrative and outcome goals and objectives were too often addressed unsystematically, if at all.

In addition to the newness of the topic, valid reasons for the underdeveloped nature of local and state level programs, include the scarcity of pertinent information for administrators. This was not to suggest that such information does not exist; rather, findings led project staff to conclude that the information (a) was widely scattered and very divergent in nature; (b) primarily concerned with the effects of sex bias rather than either the causes or the remedies; and (c) rarely has been assembled or translated into forms or sources immediately useful to educators. Among the specific information needs relative to local program development were the following:

1) What are the characteristics of effective programs addressing the target issues?
2) What kinds of evaluation are appropriate and how does one plan for and initiate such evaluation?

3) How can findings be successfully disseminated?

4) What types of current programs with which kinds of strategies exist around the nation?

5) What constitutes a programmatic effort and how can it be implemented?

6) What resources are available to local administrators and from whom?

Project staff concluded that efforts must be undertaken to increase the attention and commitment of educators to the topics of sex stereotyping and sex bias. More importantly, educators must also be provided with the necessary assistance in terms of evaluation systems, developmental information and resource incentives with which to do the job.

Component Two: Administrator Assessment of Need

Project staff concluded from findings of the administrator survey of need that the average local education administrator in North Carolina, including vocational education administrators, could be characterized in the following manner:

1) Uniformly in compliance with current minimum requirements of the law pertinent to the issues of sex stereotyping, sex bias and sex discrimination;

2) Willing and able to suggest local activities that might impact on the target issues;

3) Relatively uninformed about the particulars of the target issues;

4) Uncomfortable and possibly resentful of having to deal with community and staff with regard to tne target issues; and

5) Possessing some clear-cut needs with regard to the target issues.

Each surveyed school system had a designated Title IX coordinator and a formalized grievance procedure. Further, many systems had prepared a voluntary local plan to eliminate and prevent sex bias in vocational education, including a number of local activities which might impact on the target issues.

Administrator discomfort was noted in the uniform concern with the public relations aspects of implementing programs designed to eliminate and prevent sex stereotyping and sex bias in vocational education. The concern for public relations effects was voiced by rural administrators as a concern about adverse community reaction and by urban administrators as a concern about adverse staff reaction.

The "relatively uninformed" characterization resulted from both the discomfort of being forced to deal with the issue, the particulars of which were not clear-cut, and the primary felt need of local administrators--information at student, instructor and administrator levels. Information needs revealed in Component Two were implementation information needs as opposed to the program development information needs revealed in Component One. Among the needs revealed during this phase of the assessment were the following:

1) Needs for Students--instructional materials pertinent to the target issues, designed for all students and which addressed the subjects of sex stereotyping, sex bias and sex discrimination within the basic framework of high school vocational education instruction.

2) Needs for Teachers--

   a) Workshop and in-service materials for teachers which addressed the teachers' role and responsibility with regard to sex stereotyping, sex bias and sex discrimination.
   b) Teacher resource materials designed to assist in the instructional process.

3) Needs for Administrators--

   a) Information detailing the administrator's legal position on practical and policy matters such as hiring, promotion, athletics, student rights, teacher rights and so forth.
   b) Information indicating where and from whom the administrator could get technical assistance concerning program development and evaluation. Such information should include information about ideas and successful programs.

Component Three: Assessment of Student Instructional Materials

The findings derived from the assessment of prepared instructional materials permitted project staff to conclude that curricular strategies had a significant impact on awareness and attitudes of all students--female or male, vocational education or nonvocational education--with regard to the issues of sex stereotyping, sex bias and sex discrimination. Further, such curricula had additional, significant, positive impacts on student knowledge, attitudes and values pertaining to other work-related issues in addition to the target issues. Additionally, such strategies, including systematic assessment procedures, were introduced into the regular school curriculum without creating public or school staff negative reaction. The materials developed during the project were enthusiastically received by students and staff.

Data derived during the study suggested that the three sets of curricular strategies developed and employed during the study changed student perceptions to the extent of permitting the following conclusions:

1) Classroom-based instructional materials are a viable strategy for impacting on the awareness, attitudes and possibly interests of all students relative to the issues of sex stereotyping, sex bias and sex discrimination in vocational education. The registered impact can have both cognitive and affective dimensions.

2) Instructional materials are an effective, unobtrusive strategy with which educators can address the target issues.

3) Instructional materials, designed primarily to address the issues of sex stereotyping and sex bias can convey additional, positive cognitive and affective content on a variety of subjects ranging from work values to job seeking skills.

4) Materials that actively project students into possible real-life situations involving systems of economic, social and moral constraints (power-coercive) have a greater impact on student awareness about the target issues than materials designed according to other concepts of change.

5) Materials that actively involve students in examining personal socio-cultural norms (normative-reeducative) have a greater impact on student attitudes about the target issues than materials designed according to other concepts of change.

6) Materials that convey factual information (empirical-rational) about the target issues in the world of work have a greater impact on student information acquisition about the target issues than materials designed according to other concepts of change.

7) Curricular materials are a legitimate and acceptable means of addressing the target issues according to the student population and the teacher staff.

8) The designed curricular materials were evaluated as "better than average" by students and teachers alike and were overwhelmingly recommended by those groups for use with other students. In addition, the designed materials were rated very favorably in comparison to other classroom curricular materials in terms of vocabulary, sentence structure and information presented.

Future Actions

Based on project findings and conclusions, it is recommended that the Bureau of Occupational and Adult Education, Office of Education, give consideration to actions such as the following:

1) Sponsor the development of an evaluation system with at least three alternative procedures for assessing the relative progress of a local program in eliminating and preventing sex bias in vocational education. Such an evaluation system should include either a baseline data system against which to make comparisons, or provisions for establishing baseline information at the local or state level. It is suggested that some form of gain score system be considered which might address each of the following areas: (a) student awareness, (b) student attitude, (c) student content acquisition, (d) enrollment, (e) administrative practices such as hiring, promotion and so forth, (f) school

matters such as curriculum, guidance and counseling, extracurricular activities, libraries and interaction patterns. Alternative procedures for establishing baseline data and performing evaluations are recommended in order to encourage states to choose and adapt systems to their own needs.

2) Create an information clearinghouse and newsletter for disseminating information about sex stereotyping and sex bias as it pertains to vocational education ... perhaps using existing resources such as the newsletter of the National Foundation for the Improvement of Education or one of the journals in vocational education. Such a newsletter should be distributed at regular intervals to state and local vocational education administrators and should include current information on the law, exemplary programs, program planning and evaluation, curriculum and other topics of interest. The newsletter should be (a) free, (b) concise, and (c) contain information in immediately useable form for the local administrator. State Education Agencies should also be encouraged to provide such information updates to local administrators.

3) Sponsor a series of 10 regional workshops for state education agency personnel on the issue of sex bias and sex stereotyping in vocational education. These 2 - 5 day workshops should, at a minimum, include the following information: (a) information on effective system and program development; (b) information on pertinent laws and regulations; (c) information on model and/or effective state level and local level programs located nationwide; (d) information on program assessment and evaluation; (e) teacher and administrator workshop materials; (f) information on effective curriculum and/or instructional materials; (g) information on sources of assistance located throughout the nation; (h) information on sources of funds and materials located throughout the country; (i) information on program types and their impact; and (j) information on strategies for use in dealing with Local Education Agencies.

4) In 1978 sponsor a national assessment of programs designed to eliminate and prevent sex bias in vocational education. Such a study would have the advantage of accessing data from established programs and

could render a state-of-the-art assessment on the provisions of the Education Amendments of 1976. The assessment should attend to programs at state and local level and must devise alternate systems for creating comparable data.

5) Implement a compliance reporting system at the Federal level for programs designed to overcome and eliminate sex stereotyping, bias and discrimination in vocational education. Even though this will heighten existing resentment of local administrators for federal guidelines, the evidence clearly indicates that vocational educators respond particularly well to compliance requirements in program development. However, it is recommended that the compliance program be designed to require only moderate amounts of time unless additional funding is made available with the program in order to support increased administrator responsibilities.

6) Encourage and provide assistance to state departments of public instruction and/or other public and private agencies to develop and implement school administrator workshops to provide specific kinds of information to local vocational education administrators. Among the types of information to be included in such workshops are (a) information on the law and any compliance regulations; (b) strategies to overcome and eliminate sex bias, stereotyping and discrimination; (c) teacher workshop materials; (d) information on program planning and evaluation; (e) information on characteristics of and specifics of effective model programs which address the target issues; (f) information on administrative and schooling practices pertinent to sex bias such as hiring, promotion, materials and so forth; and (g) information on effective curriculum and/or instructional materials as well as teacher resource books.

7) Stimulate and encourage the development and dissemination of inexpensive, effective curricular materials for use directly in the classroom which address the issues of sex stereotyping, sex bias and sex discrimination in vocational education and which have the following characteristics:

a) designed for both male and female students;

b) use a variety of teaching techniques in order to personalize instruction;

c) can be merged into the on-going basic curriculum as an integral part;

d) have demonstrated levels of effectiveness and transportability capacities;

e) can be used to teach other skills and content as well as provide information on sex bias; and

f) are of high interest and varying degrees of difficulty to stimulate students of all levels of academic achievement.

8) Sponsor the development of curricular materials which address the issues of sex stereotyping, sex bias and sex discrimination in vocational and career education for elementary aged school children since research evidence on occupational status and occupation preference indicates that these attitudes are formed at an early age.

9) Sponsor and encourage the research and development of instructional materials that can be used to teach the issues of sex stereotyping, sex bias and sex discrimination in vocational education using whatever current curricular materials are currently in use in vocational classes. For example, such materials might include a teacher guide and student workbook that contain exercises which analyze the language employed in the textbooks students use; it might assist students in conducting a self-study of practices in that school; or, it might teach students to analyze the pictures in the school yearbook for instances of bias. Such materials would be very inexpensive and highly effective since they would utilize the student's immediate environment to investigate sexism.

10) Sponsor a series of research and development projects to translate/convert the research and evaluation information on (a) the occurrences and the effects of sex stereotyping and sex bias in vocational education and (b) current program development into materials for use in classrooms and/or resource books for teachers. For example, if research

evidence indicates that there are perceptual differences for males and females, convert that difference into effective instructional materials. If research evidence suggests that leadership behavior in groups of students varies by the gender mix of the groups, translate this fact into teaching resources. Such a project would bridge the gap between research and practice by converting the sizable amount of research data on sex bias into results that practitioners can use.

11) Sponsor and encourage a series of research and development projects with the purposes being to identify and to quantify local social and school factors which correlate with or cause the occurrence of sex stereotyping and sex bias in vocational education. Among the factors that bear investigation are (a) student characteristics that evidence or facilitate sex stereotyping, (b) employer and union practices that contribute to stereotyping and bias, (c) school administrative practices that encourage or extend bias and (d) societal characteristics that correlate with the occurrences of bias. Studies such as the suggested differ from current research in that rather than identifying the effects of bias, the cause and correlates are addressed ... and in a format other than self-study.

REFERENCES

1. Frazier, N. and M. Sadker, Sexism in School and Society. (New York: Harper and Row, Publishers, 1973), p. 197.

2. Personal experience of author, 1961-1964.

3. Harrison, B. G., Unlearning the Lie: Sexism in School. (New York: Liveright, 1973), pp. 6,7.

4. U. S. Department of Labor, Women Workers Today. (Washington, D. C.: Employment Standards Administration, Women's Bureau, 1976).

5. Piler, A., Working Women: Toward a New Society. (New York: Annual Report of the Carnegie Commission, 1976).

6. Lewis, M. V. and L. W. Kaltreider, Attempts to Overcome Sex Stereotyping in Vocational Education. Institute for Research on Human Resources, (University Park, Pa.: Pennsylvania State University Press, 1977).

7. Sargent, A. Beyond Sex Roles. (New York: West Publishing Co., 1976).

8. "Sex Equality in Educational Administration," American Association of School Administrators Executive Handbook, Vol. VII. (Arlington, Va.: June, 1975).

9. U. S. Department of Labor, "The Myth and the Reality." (Washington, D. C.: Employment Standards Administration, Women's Bureau, 1974).

10. U. S. Department of Labor, "Twenty Facts on Women Workers." (Washington, D. C.: Employment Standards Administration, Women's Bureau, 1974).

11. "The Myth and the Reality." op. cit.

12. Henning, M. and A. Jardim, The Managerial Woman. (New York: Anchor Press/Doubleday, 1976).

13. Maher, S., "S.A.V.E.* Your Schools." (Washington, D. C.: Human Resources Management, Inc., April, 1976).

14. Freedman, G., "Developmental Questioning Scheme," paper at press, 1977.

15. Bennis, W., K. Benne and R. Chin, The Planning of Change. (New York: Holt, Rinehart & Winston, 1961).

16. Jacobsen, W. D., Power in Interpersonal Relations. (Belmont, Calif.: Wadsworth Publishing Co., 1972).

17. Cambell, O.T. and J.C. Stanley, Experimental and Quasi-Experimental Designs For Research. (Chicago: Rand McNally and Co., 1963).

18. Isaacson, L. E., "Systems for Classifying Occupations," in Career Information in Counseling and Teaching, 2nd edition. (Boston: Allyn and Bacon, Inc., 1971).

19. Havelock, R. G., Planning for Innovation Through Dissemination and Utilization of Knowledge. (Ann Arbor: University of Michigan Press, 1971). and Rogers, E. M. and F. Shoemaker, Communication of Innovations: A Cross Cultural Approach. (New York: Free Press, 1971).

20. Bennis, W., K. Benne and R. Chin, The Planning of Change, 2nd and 3rd editions. (New York: Holt, Rinehart and Winston, 1961). and French, W. L. and C. Bell, Organizational Development: Behavioral Science Interventions for Organizational Improvements. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972).

21. Hage, J. and M. Aiken, Social Change in Complex Organizations. (New York: Random House, 1970).

22. Baldridge, J. V. and F. E. Deal, Managing Change in Educational Organizations. (New York: McCutchen Publishing Co., 1975); and Coser, L., The Functions of Social Conflict. (New York: Free Press, 1964); and Baldridge, J. V., Power and Conflict in the University: Research in the Sociology of Complex Organizations. (New York: J. Wiley, Publishers, 1971).

23. Stedman, D. J.,"The Technical Assistance System: A New Organizational Form for Improving Education," a paper presented at a Conference on Educational Support Systems, Washington, D. C., May, 1974.

APPENDIX A

Administrator Guided Interview

LEA _____

Date _____

Interviewer _____

ADMINISTRATOR GUIDED INTERVIEW

A. GENERAL INFORMATION

1. Who is your Title IX coordinator? How long have they held this position and how much of their time is consumed in this responsibility?

2. When was your grievance procedure established? How did you publicize it? When and how have you had occasion to use it?

3. Have you used resources in North Carolina in your program to eliminate sex bias in vocational education? What resources have you utilized, when and how?

4. Have you asked companies with whom you have contractual agreements to verify that they are in compliance with regard to sex discrimination?

B. BARRIERS AND NEEDS

1. Please list and elaborate on the five most potent barriers to implementing a successful program to eliminate and prevent sex stereotyping, sex bias and sex discrimination in vocational education.

a)

b)

c)

d)

e)

2. Please list and elaborate on the three most significant needs you have as a vocational education administrator in establishing or operating a program that successfully eliminates and prevents sex stereotyping, sex bias and sex discrimination in vocational education.

a)

b)

c)

C. STRATEGIES

1. Please rank the following ideas as potential helpful assistance that might be provided to other Southeastern school superintendents or vocational education administrators who might be beginning to design a program to eliminate/prevent sex bias in vocational education.

___ a. Workshop for central office and administrative staff
___ b. Checklists for self-evaluation
___ c. Assistance with local plans and/or grievance procedures
___ d. Guidelines for job interviewing
___ e. Course descriptions and recruitment policies
___ f. Constructive use of examples of bias in materials
___ g. Teacher/Admin. source book on strategies for overcoming bias
___ h. Salary, promotion and hiring requirements
___ i. Current information on the law
___ j. Brief update on bias in education
___ k. Teacher workshop and materials
___ l. Student materials

2. What specific strategies have you implemented with regard to eliminating sex bias in your:

a. hiring and promotion

b. enrollment in class

c. materials such as texts, etc.

d. athletics

e. curricular content/course offerings

f. library and facilities

g. counseling

h. extracurricular activities

i. physical education courses

j. testing

k. dress code

l. teacher behavior

3. (In addition, interviewers are to unobtrusively question and/or note responses relating to general knowledge about the issue of sex bias and sex stereotyping, particularly with regard to the following items):

a. income of men and women (and value of various kinds of work)

b. behavioral expectation differences between males and females

c. specific laws that apply

d. definition of sex stereotyping, bias and discrimination

e. sex stereotyped occupations and training programs

APPENDIX B

The Student Awareness Measure

Pretest: A
Post Test: B

STUDENT AWARENESS

MEASURE

Title of Curriculum

_____

Form - A (Pre-Test)

On this page and the several that follow, are a series of questions to answer. The questions are divided into three sections, each of which is preceded by instructions that apply to that section. Please work quickly, provide your best estimate for each answer and remember that people have different opinions and we want your opinion.
DO NOT SIGN or in any way identify yourself on this questionnaire.

A. GENERAL INFORMATION

This Section of the questionnaire is optional. If you object to any question in Section A, skip the question and continue to answer the others. Please provide your best guess if there are questions for which you do not know the exact answer. This Section should take you about 10 minutes to complete.

1. What does your father/guardian do for a living?

_____

2. What does your mother/guardian do for a living?

_____

3. Do you have an older brother who works?

_____Yes _____No

4. If the answer to question 3 is yes, what is your brother's job?

_____

5. Do you have an older sister who works?

_____Yes _____No

6. If the answer to question 5 is yes, what is your sister's job?

_____

7. What is your sex?

_____Male _____Female

8. What kind of student do you consider yourself to be?

_____Excellent _____Good _____Average _____Poor

9. Do you or have you taken vocational/occupational education courses?

___Yes ___No If so, what course(s)_____

10. How many hours a week do you work at a job? (Include home chores, paid and unpaid jobs away from home).

____None ____1-10 Hours ____11-20 Hours ____Above 20 Hours

11. Highest grade of school completed by father/guardian? (Circle one answer)

Elementary School	High School	Trades/College	Graduate School
1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	1 2 3 4 5 6

12. Highest grade of school completed by mother/guardian?(Circle one answer)

Elementary School	High School	Trades/College	Graduate School
1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	1 2 3 4 5 6

13. If you do not object to supplying the information, how much does your father/guardian receive per week? (Check your best estimate)

___None ___$1-$100 ___$101-$150 ___$151-$200 ___Above $200

14. If you do not object to supplying the information, how much does your mother/guardian receive per week? (Check your best estimate)

___None ___$1-$100 ___$101-$150 ___$151-$200 ___Above $200

15. If you do not object to supplying the information, in what religion (denomination) were you brought up? (For example, do you attend the Baptist or the Episcopal or the Catholic Church?)

_____

16. If you do not object to supplying the information, to what race do you belong?

_____

B. JOBS

This Section of the questionnaire is important and somewhat more involved than Section A. It takes about 15 minutes of your time and requires that you provide three different answers.

1. In Column A on the next page, circle Male for those jobs you think are for men. Circle Female for those jobs you think are for women. Circle Both for those jobs that you think are for either men or women. In the example below, if you consider the job of manager to be a job for men, you would circle the word Male below; if you consider the job to be a job for women, you would circle the word Female; if you consider the job to be a job for Both women and men, you would circle the word Both. Now circle your choice in the example below.

Male/Female/Both Manager

2. In Column B on the next page, circle the number that indicates how important you think the job is. If you think it is a very important job, circle a 1; if you think it is important, but not so very important, circle 2; if you think the job is only somewhat important, circle 3; if you think the job is <u>not</u> very important, circle a 4. How important do you consider the job of a manager to be? Circle your answer in the example below.

1 2 3 4 Manager

3. In Column C below, please circle the letter that indicates how you feel about having each job listed in Column D. Circle "Yes" if you think you would like to have the job; circle "No" if you would not like to have the job; circle the question mark "?" if you are not sure how you feel about having the job. Would you like to work as a manager? Please respond to this example below.

Yes/No/? Manager

Now repeat these processes for each of the jobs listed below.

WHO SHOULD HAVE THIS JOB? (A) Circle one answer for each job	IMPORTANCE RANKING (B) 1=Very Important 2=Important 3=Somewhat Important 4=Not Very Important	JOB PREFERENCE (C) Circle one answer for each job	JOBS (D)
Male/Female/Both	1 2 3 4	Yes/No/?	Journalist/Reporter
Male/Female/Both	1 2 3 4	Yes/No/?	Dietician
Male/Female/Both	1 2 3 4	Yes/No/?	Lawyer
Male/Female/Both	1 2 3 4	Yes/No/?	Career Military Enlisted Personnel
Male/Female/Both	1 2 3 4	Yes/No/?	Nurse
Male/Female/Both	1 2 3 4	Yes/No/?	Police Officer
Male/Female/Both	1 2 3 4	Yes/No/?	Sales Clerk
Male/Female/Both	1 2 3 4	Yes/No/?	Truck Driver
Male/Female/Both	1 2 3 4	Yes/No/?	School Teacher (Elementary)
Male/Female/Both	1 2 3 4	Yes/No/?	Hairstylist
Male/Female/Both	1 2 3 4	Yes/No/?	Mail Carrier
Male/Female/Both	1 2 3 4	Yes/No/?	Executive Secretary
Male/Female/Both	1 2 3 4	Yes/No/?	Accountant
Male/Female/Both	1 2 3 4	Yes/No/?	Dental Hygienist
Male/Female/Both	1 2 3 4	Yes/No/?	Medical Doctor
Male/Female/Both	1 2 3 4	Yes/No/?	School Teacher (High School)
Male/Female/Both	1 2 3 4	Yes/No/?	Career Military Officer
Male/Female/Both	1 2 3 4	Yes/No/?	Receptionist
Male/Female/Both	1 2 3 4	Yes/No/?	Entertainer
Male/Female/Both	1 2 3 4	Yes/No/?	Clergy (Minister)
Male/Female/Both	1 2 3 4	Yes/No/?	Electrician
Male/Female/Both	1 2 3 4	Yes/No/?	Social Worker
Male/Female/Both	1 2 3 4	Yes/No/?	Small Business Owner
Male/Female/Both	1 2 3 4	Yes/No/?	Computer Programmer
Male/Female/Both	1 2 3 4	Yes/No/?	Scientist

C. INTERESTS

Please circle the opinion that best describes how you feel about each of the following statements. This Section will take about 15 minutes.

1.	I need a job to be happy.	Agree Strongly	Agree	Disagree	Disagree Strongly
2.	Jobs are earned on the basis of skills rather than for whom you know.	Agree Strongly	Agree	Disagree	Disagree Strongly
3.	Most people are excited about going to their jobs.	Agree Strongly	Agree	Disagree	Disagree Strongly
4.	People who accept their condition in life are happier than those who try to change things.	Agree Strongly	Agree	Disagree	Disagree Strongly
5.	A man needs a job to be happy.	Agree Strongly	Agree	Disagree	Disagree Strongly
6.	Promptness is an important personality characteristic.	Agree Strongly	Agree	Disagree	Disagree Strongly
7.	Women should not be in positions of authority over men.	Agree Strongly	Agree	Disagree	Disagree Strongly
8.	A good job is a job where what is to be done and how to do it are always clear.	Agree Strongly	Agree	Disagree	Disagree Strongly
9.	The most important qualities in a man are strength of will and determined ambition.	Agree Strongly	Agree	Disagree	Disagree Strongly
10.	People can actually get ahead through hard work.	Agree Strongly	Agree	Disagree	Disagree Strongly
11.	A woman needs a job to be happy.	Agree Strongly	Agree	Disagree	Disagree Strongly
12.	People should be excited about going to their jobs.	Agree Strongly	Agree	Disagree	Disagree Strongly
13.	Women think less clearly than men.	Agree Strongly	Agree	Disagree	Disagree Strongly

14.	I need a job to be fulfilled.	Agree Strongly	Agree	Disagree	Disagree Strongly
15.	On the whole, I am satisfied with myself.	Agree Strongly	Agree	Disagree	Disagree Strongly
16.	Women should be restricted in certain ways in which men have more freedom.	Agree Strongly	Agree	Disagree	Disagree Strongly
17.	I am able to do things as well as most other people.	Agree Strongly	Agree	Disagree	Disagree Strongly
18.	If I marry, I expect my mate (husband/wife) to work.	Agree Strongly	Agree	Disagree	Disagree Strongly
19.	Even today women live under unfair restrictions that ought to be done away with.	Agree Strongly	Agree	Disagree	Disagree Strongly

20. Please rank the statements in each of the two groups of statements below by placing a "1" beside the most important statement; a "2" by the next most important statement; and a "3" by the next most important statement.

GROUP 1

____ I enjoy working with things.

____ I enjoy working with people.

____ I enjoy working with ideas.

GROUP 2

____ Personal satisfaction is the most important reason for working.

____ Relief of boredom is the most important reason for working.

____ Respect from others is the most important reason for working.

____ Making money is the most important reason for working.

STUDENT AWARENESS MEASURE

Title of Curriculum

_____

Form - B (Post Test)

On this page and the several that follow, are a series of questions to answer. The questions are divided into four sections, each of which is preceded by instructions that apply to that section. Please work quickly, provide your best estimate for each answer and remember that people have different opinions and we want your opinion.
DO NOT SIGN or in any way identify yourself on this questionnaire.

A. GENERAL INFORMATION

This section of the questionnaire is optional. If you object to any question in Section A, skip the question and continue to answer the others. Please provide your best guess if there are questions for which you do not know the exact answer. This section should take you about 10 minutes to complete. Even though you answered some of these questions before, it is very important that you do so again.

1. What does your father/guardian do for a living?

   _____

2. What does your mother/guardian do for a living?

   _____

3. Do you have an older brother who works?

   _____Yes _____No

4. If the answer to question 3 is yes, what is your brother's job?

   _____

5. Do you have an older sister who works?

   _____Yes _____No

6. If the answer to question 5 is yes, what is your sister's job?

   _____

7. What is your sex?

   _____Male _____Female

8. What kind of student do you consider yourself to be?

   _____Excellent _____Good _____Average _____Poor

9. Do you or have you taken vocational/occupational education courses?

   ___Yes ___No If so, what course(s) _____

10. How many hours a week do you work at a job? (Include home chores, paid and unpaid jobs away from home).

    ____None ____1-10 Hours ____11-20 Hours ____Above 20 Hours

11. Highest grade of school completed by father/guardian? (Circle one answer)

Elementary School	High School	Trades/College	Graduate School
1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	1 2 3 4 5 6

12. Highest grade of school completed by mother/guardian?(Circle one answer)

Elementary School	High School	Trades/College	Graduate School
1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	1 2 3 4 5 6

13. If you do not object to supplying the information, how much does your father/guardian receive per week? (Check your best estimate)

___None ___$1-$100 ___$101-$150 ___$151-$200 ___Above $200

14. If you do not object to supplying the information, how much does your mother/guardian receive per week? (Check your best estimate)

___None ___$1-$100 ___$101-$150 ___$151-$200 ___Above $200

15. If you do not object to supplying the information, in what religion (denomination) were you brought up? (For example, do you attend the Baptist or the Episcopal or the Catholic Church?)

_____

16. If you do not object to supplying the information, to what race do you belong?

_____

B. JOBS

This Section of the questionnaire is important and somewhat more involved than Section A. It takes about 15 minutes of your time and requires that you provide three different answers.

1. In Column A on the next page, circle Male for those jobs you think are for men. Circle Female for those jobs you think are for women. Circle Both for those jobs that you think are for either men or women. In the example below, if you consider the job of manager to be a job for men, you would circle the word Male below; if you consider the job to be a job for women, you would circle the word Female; if you consider the job to be a job for Both women and men, you would circle the word Both. Now circle your choice in the example below.

Male/Female/Both Manager

2. In Column B on the next page, circle the number that indicates how important you think the job is. If you think it is a very important job, circle a 1; if you think it is important, but not very important, circle 2; if you think the job is only somewhat important, circle 3; if you think the job is not very important, circle a 4. How important do you consider the job of a manager to be? Circle your answer in the example below.

1 2 3 4 Manager

3. In Column C below, please circle the letter that indicates how you feel about having each job listed in Column D. Circle "Yes" if you think you would like to have the job; circle "No" if you would not like to have the job; circle the question mark "?" if you are not sure how you feel about having the job. Would you like to work as a manager? Please respond to this example below.

Yes/No/? Manager

Now repeat these processes for each of the jobs listed below.

WHO SHOULD HAVE THIS JOB? (A) (Circle one answer for each job)	IMPORTANCE RANKING (B) (1=Very Important, 2=Important, 3=Somewhat Important, 4=Not Very Important)	JOB PREFERENCE (C) (Circle one answer for each job)	JOBS (D)
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Male/Female/Both	1 2 3 4	Yes/No/?	Sales Clerk
Male/Female/Both	1 2 3 4	Yes/No/?	Mail Carrier
Male/Female/Both	1 2 3 4	Yes/No/?	Medical Doctor
Male/Female/Both	1 2 3 4	Yes/No/?	Social Worker
Male/Female/Both	1 2 3 4	Yes/No/?	Dental Technician
Male/Female/Both	1 2 3 4	Yes/No/?	Scientist
Male/Female/Both	1 2 3 4	Yes/No/?	School Teacher (High School)
Male/Female/Both	1 2 3 4	Yes/No/?	Small Business Owner
Male/Female/Both	1 2 3 4	Yes/No/?	Executive Secretary
Male/Female/Both	1 2 3 4	Yes/No/?	Police Officer
Male/Female/Both	1 2 3 4	Yes/No/?	Computer Programmer
Male/Female/Both	1 2 3 4	Yes/No/?	Receptionist
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Male/Female/Both	1 2 3 4	Yes/No/?	Truck Driver
Male/Female/Both	1 2 3 4	Yes/No/?	Career Military Enlisted Personnel
Male/Female/Both	1 2 3 4	Yes/No/?	Entertainer
Male/Female/Both	1 2 3 4	Yes/No/?	Dietician

C. INTERESTS

Please circle the opinion that best describes how you feel about each of the following statements. This Section will take about 15 minutes.

1.	Most people are excited about going to their jobs.	Agree Strongly	Agree	Disagree	Disagree Strongly
2.	On the whole, I am satisfied with myself.	Agree Strongly	Agree	Disagree	Disagree Strongly
3.	If I marry, I expect my mate (husband/wife) to work.	Agree Strongly	Agree	Disagree	Disagree Strongly
4.	I am able to do things as well as most other people.	Agree Strongly	Agree	Disagree	Disagree Strongly
5.	People can actually get ahead through hard work.	Agree Strongly	Agree	Disagree	Disagree Strongly
6.	Jobs are earned on the basis of skills rather than for whom you know.	Agree Strongly	Agree	Disagree	Disagree Strongly
7.	Promptness is an important personality characteristic.	Agree Strongly	Agree	Disagree	Disagree Strongly
8.	The most important qualities in a man are strength of will and determined ambition	Agree Strongly	Agree	Disagree	Disagree Strongly
9.	Women think less clearly than men.	Agree Strongly	Agree	Disagree	Disagree Strongly
10.	A good job is a job where what is to be done and how to do it are always clear.	Agree Strongly	Agree	Disagree	Disagree Strongly
11.	I need a job to be happy.	Agree Strongly	Agree	Disagree	Disagree Strongly
12.	Women should be restricted in certain ways in which men have more freedom.	Agree Strongly	Agree	Disagree	Disagree Strongly
13.	A man needs a job to be happy.	Agree Strongly	Agree	Disagree	Disagree Strongly
14.	People should be excited about going to their jobs.	Agree Strongly	Agree	Disagree	Disagree Strongly

15. Women should not be in positions of authority over men.	Agree Strongly	Agree	Disagree	Disagree Strongly
16. A woman needs a job to be fulfilled.	Agree Strongly	Agree	Disagree	Disagree Strongly
17. Even today women live under unfair restrictions that ought to be done away with.	Agree Strongly	Agree	Disagree	Disagree Strongly
18. People who accept their condition in life are happier than those who try to change things.	Agree Strongly	Agree	Disagree	Disagree Strongly
19. People can actually get ahead through hard work.	Agree Strongly	Agree	Disagree	Disagree Strongly

20. Please rank the statements in each of the two groups of statements below by placing a "1" beside the most important statement; a "2" by the next most important statement; and a "3" by the next most important statement.

GROUP 1

____ I enjoy working with things.

____ I enjoy working with people.

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GROUP 2

____ Personal satisfaction is the most important reason for working.

____ Relief of boredom is the most important reason for working.

____ Respect from others is the most important reason for working.

____ Making money is the most important reason for working.

D. IMPRESSIONS

Please respond to each of the questions below by checking the answer that best describes how you feel about each of the statements. In those several instances where you are asked to fill in the blank, please keep your answers short. This section requires about 10 minutes to complete.

1. What is your opinion about the overall value of the materials?

___ excellent ___ good ___ fair ___ poor

2. What is your opinion about the words used in the materials?

___too difficult (much more difficult than most materials used in my classes)

___difficult but acceptable (slightly more difficult than most materials used in my classes)

___average (about the same as most materials used in my classes)

___too simple (easier than most materials used in my classes)

3. What is your opinion about the sentences used in the materials?

___too difficult (much more difficult than most materials used in my classes)

___difficult but acceptable (slightly more difficult than most materials used in my classes)

___average (about the same as most materials used in my classes)

___too simple (easier than most materials used in my classes)

4. What is your opinion about the information contained in these materials?

___too difficult (much more difficult than most materials used in my classes)

___ difficult but acceptable (slightly more difficult than most materials used in my classes)

___average (about the same as most materials used in my classes)

___too simple (easier than most materials used in my classes)

5. Please list three pieces of information/ideas you learned about by using these materials.

a. _____

b. _____

c. _____

6. Please list three activities you learned how to do through using these materials.

a. _____

b. _____

c. _____

7. Please list three opinions you have formed by using these materials.

a. _____

b. _____

c. _____

8. Please indicate how familiar you were with the information on sex stereotyping before using these materials by checking the appropriate response below. The materials presented information that was:

____ almost entirely new and different

____ somewhat new and different

____ somewhat familiar

____ very familiar

9. Did any of the information surprise you?

____ Yes ____ No

10. If yes, please indicate several instances.

_____

_____

11. Did the materials disturb you in any way?

____ Yes ____ No

12. If yes, please indicate why.

_____

_____

13. Do you think the materials had any influence on your beliefs about sex stereotyping and sex discrimination?

____ substantially ____ some ____ a little ____ very little

14. Would you recommend that these materials be used in other classes?

____ Yes ____ No

15. Why or why not?

_____

_____